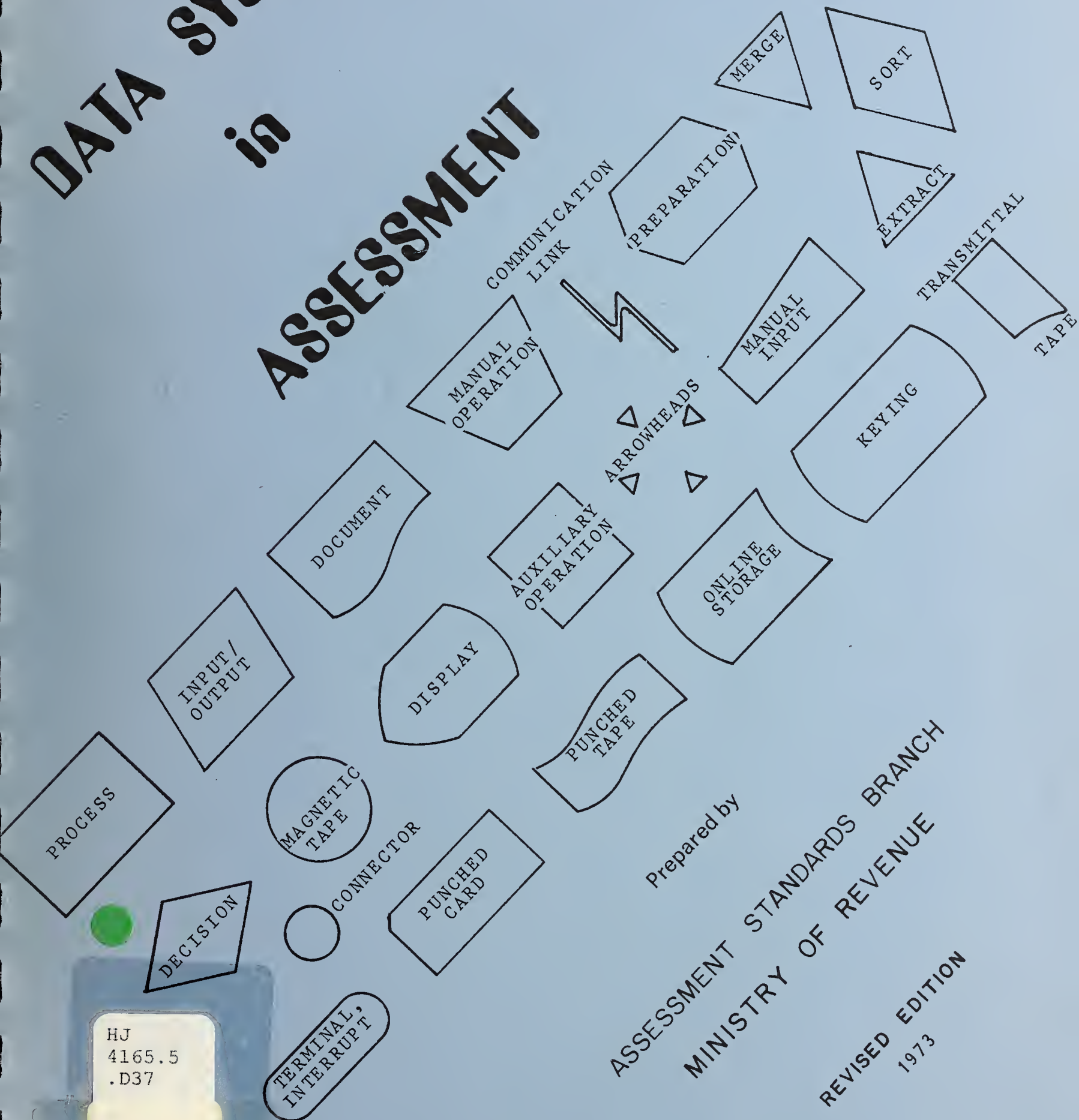


DATA SYSTEMS

in

ASSESSMENT



Prepared by

ASSESSMENT STANDARDS BRANCH
MINISTRY OF REVENUE

REVISED EDITION
1973

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DATA SYSTEMS IN ASSESSMENT

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MINISTRY OF REVENUE

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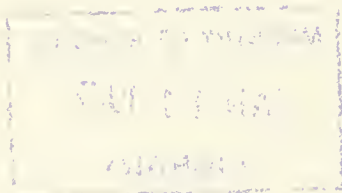
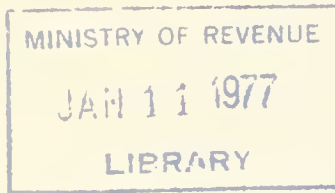
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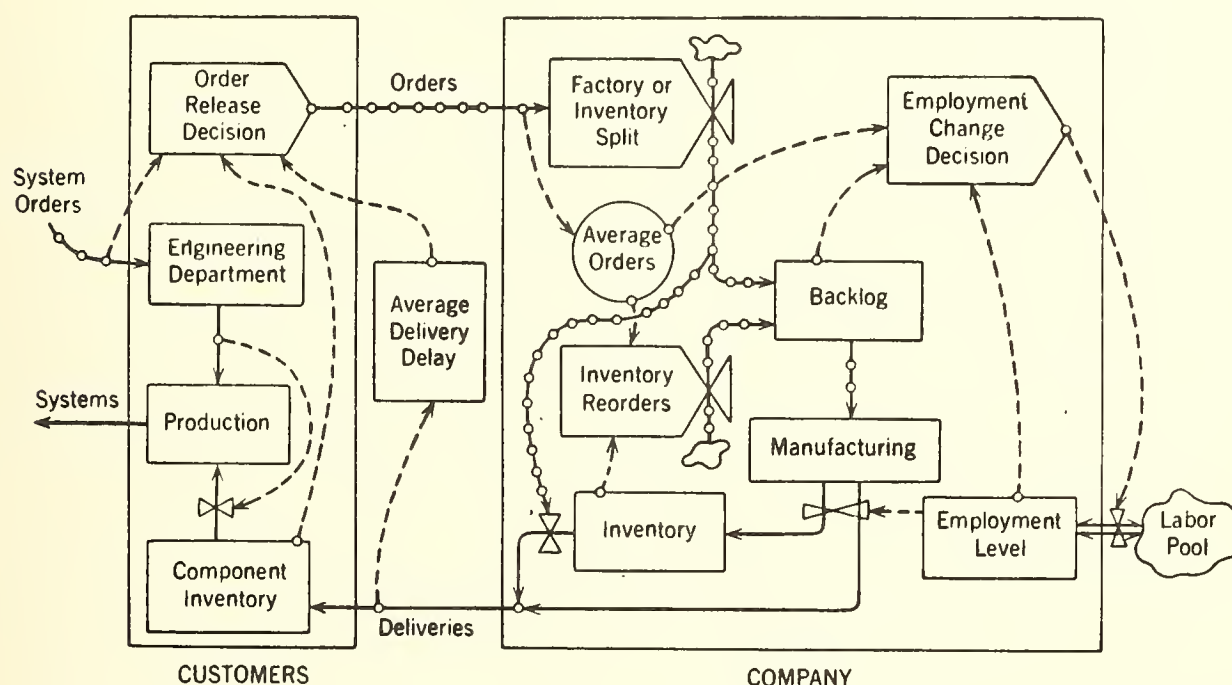
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DATA SYSTEMS IN ASSESSMENT

Introduction

All organizations require information as a prerequisite to the performance of their particular function. Most of us are familiar to some degree, with the operation of an information system in a profit-making enterprise or business. A typical flow of information in such an organization could take on the following configuration:



Likewise, in governmental organizations, a flow of data or information is essential to the fulfillment of the function which that part of the public services is charge with. Unlike a business which supposedly responds to customer demand, the function of a branch of government is usually defined by statute. Other than this particular difference, the need of any type of organization (governmental or otherwise) for information in order to operate effectively, is equally applicable.

It is equally important that recognition be given to the fact that the flow of data in an organization can take on a variety of forms. A memorandum is a form of information which when transmitted from one person to another becomes part of a flow. Much, if not most information which affects

operations is recorded and/or processed in a manual form.

Only occasionally does a need arise which necessitates the use of automatic or electronic aids and even then a considerable variation exists in terms of complexity. A good example here would be the use of calculators to make computations in regional assessment offices. This constitutes a form of information (or data) processing. In the Assessment Division, on the whole, most data is processed manually. As a matter of fact, of the two main types of information which form our area of concern, that is, data on people and property, efforts at automation have concentrated on the former category. So, although efforts are being made to investigate methods of computerizing information on property, as yet little progress beyond property address or description has been attempted. Even in the realm of people-oriented information considerable work remains to be done before a consistent standard for collection, editing, and processing of such information is adopted on a province-wide basis.* This paper, of necessity, can only concentrate on those aspects of the assessment information flow which are common across the province. To this end, the paper divides the assessment data system into five stages:

- (1) Data Collection
- (2) Data Coding
- (3) Data Input
- (4) Data Processing
- (5) Data Output

The stages outlined above follow one another in a sequence and it is necessary to repeat certain parts of the process annually. Each of the above stages are discussed in individual chapters. (Chapters I - V)

* At the moment, a Standard Assessment System committee has been set up to develop consistent Province-wide methods for the collection, editing and processing of people-oriented information.

When all the stages used in a data system are pieced together they form a description of a function. Chapter VI attempts to show through a discussion of certain individual assessment functions how the different stages in a data flow go together to make up a system.

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(A) Data Collected by the Assessment Division

(1) Electoral Enumeration Programme

The previous enumeration programme discussed in the first edition of Data Systems in Assessment has undergone considerable change due to the passage of The Municipal Elections Act, in June of 1972.

The type of information being collected in fulfillment of the requirement of the aforesaid Act differs from previous enumerations in several ways:

(a) Focus on Municipal Voter Information

The new enumeration programme concentrates on data necessary for municipal election purposes. The actual information collected includes:

- Names and Addresses of owners, tenants, boarders, lodgers, and children
- Citizenship
- Residency Code
- School Support
- Religion
- Occupancy Status
- Sex Code
- Mailing Address

Other information relating to new constructions or change of use is also collected as part of the electoral enumeration.

(b) Time of Collection

Information collection is made during a much briefer period of time than the previous enumeration programme. (Section 18 of The Municipal Elections Act confines collection to the period commencing on the Tuesday following the first Monday in September and ending on the second Tuesday of October in an election year.

(c) Frequency of Collection

The primary purpose of the Electoral Enumeration Programme is to compile a Voter's List for municipal and school board elections which take place every two years. Therefore, rather than enumerate municipal voter information on a yearly basis as

used to be necessary, collection will be done on a biennial basis. For most municipalities this will occur in same year but there will be some municipalities which will be on a different cycle, and their electoral period will not coincide with the regular period of elections.

(d) Collection Form Used

A data collection form is to be used for the collection of municipal voter information. Figure 1.1 illustrates the new Municipal Enumeration Notice (M.E.N.) which has been altered slightly from the form used in 1972.

(1A) The Census Enumeration Programme

Besides municipal voter information, there are other needs to be fulfilled which require that an annual enumeration be conducted in all municipalities in the province for purpose of:

1. determining school support for the direction of municipal taxes
2. determining an accurate population count when allocating grants
3. maintaining an up-to-date record of all properties

There are also those needs which go beyond municipal requirements but include those requests of assessment data from other provincial federal, planning and private organizations. Although these needs are very much unspecified at this time, the Enumeration programmes will be expanding its interests into this field very shortly.

(a) Information Collected

The Census Enumeration Programme will obviously include the information collected as part Electoral programme but may also include:

- Occupant Tax Data
- Property Planning Data
- Occupant Planning Data
- Rents

A) See reverse side for additional instructions before completing this notice.
B) Please return changed notices immediately.
C) Please print in block letters:

IF THE INFORMATION BELOW IS INCORRECT, PLEASE MAKE ANY NECESSARY CHANGES

INSERT ADDITIONAL NAMES ON REVERSE SIDE

SIGNATURE OF PERSON ENUMERATED

(b) Frequency of Enumeration

The Assessment Amendment Act, 1972 (Bill 207) provides for amendments to Section 23 of the Act so that the census enumeration programme will be carried on in the form of an annual census which will include school support and other information as may be prescribed by Cabinet.

(c) The Time of Collection

According to the amendments provided for in Section 6 of The Assessment Amendment Act, 1972, the annual census shall henceforth be held on the Tuesday following the first Monday of September and ending on the second Tuesday of October. On every second year this date will coincide with the new biennial Municipal Enumeration.

(d) Method of Collection

Until the Fall of 1972, enumerators have been using the "Data Revision Sheet" (DRS) as their basic field sheet. This has been replaced by the "Assessment Data Sheet" (ADS) which has incorporated the same principles of field updating as used in the "Municipal Enumeration Notice". Efforts to improve the MEN form have precluded the possibility of actually using the ADS as a field sheet. It is expected that in 1974 the ADS will receive its first exposure to field use. (See Figure 1.2)

For each property, there is an ADS identifying the owner. If the property also had tenants there is an additional ADS for the tenants occupying each assessable unit. This applies to residential properties as well as commercial and industrial properties. If a portion of the residential property is used for non-residential purposes, there is an Assessment Data Sheet for this also.

In each regional office, the ADS provides office personnel with a complete file of all current assessment and statistical information for each assessed property and assessment unit. Changes to a particular property or assessable unit are manually inserted and subsequently updated through the computer. Such

Figure 1.2

[illegible]

changes may result from change of ownership, address, assessment, court decisions or from reports which are prepared at the data centre at different stages of processing.

The information that is recorded on the Assessment Data Sheet will vary depending upon whether it pertains to the property or to the assessable unit within the property.

Property: a unit of real property generally consists of vacant land or land plus improvements. See The Assessment Act, Section 1(k) and The Municipal Act, 1(h).

Assessable Unit: a property may be subdivided into a number of tenancies or occupancies, each of which is assessed as a separate portion. (See The Assessment Act, Section 17(1)3. This is of course, subject to 17(2)2.) These portions are referred to in the Data Collection Manual as assessable units. A property in which the owner is the only occupant constitutes one assessable unit.

For each item of information, the Data Collection Manual indicates whether the data should be recorded for the property or for the assessable unit within the property.

(e) Additional Information Collected

In addition to the data absolutely required by law, enumerators frequently must collect certain other information about the property and its uses. This is in response to requests from the local council of the municipality. While this information is not strictly required by law, it is needed if governments are to devise efficient policies, responsive to the needs of the people. Tax Data, Planning Data and Rental Data are examples of such information. Such data enable a community to forecast its future characteristics. From this projection, a model for the municipality may be constructed, needs determined and preparations begun to meet those needs.

The Assessment Standards Branch is currently involved with a study to identify and evaluate those needs from other users and modify the ADS accordingly. Fig. 1.3 illustrates the existing state of information now presently available on the ADS. The first step is to determine exactly for what municipalities this data is being collected.

DATA ELEMENT SUMMARY

(from ADS)

05 <u>ROLL NUMBER</u>	25 <u>SHORT DESCRIPTION</u>	50 <u>POPULATION DATA</u>	60 <u>OCCUPANT PLANNING</u>
01 county	01 concession	01 name	01 economic
02 municipality	02 plan	02 sex	02 physical
03 map area	03 lot	03 occupancy status	03 tenancy
04 map area div.	04 part lot	04 religion	04 family
05 map subdiv.		05 school support	05 id number
06 parcel	30 <u>LONG DESCRIPTION</u>	06 residency status	06 occupied floor area
07 parcel sub	full description	07 citizenship	07 number of cars
08 tenant		08 year of birth	08 number of trucks
			09 number employed
			10 dwelling
			11 basement
			12 ground
			13 second
			14 attic
			15 total number
10 <u>MAILING ADDRESS</u>	35 <u>PROPERTY DIMENSIONS</u>	55 <u>OCCUPANT TAX DATA</u>	65 <u>SALES</u>
01 address	01 frontage	01 unit class	01 instrument number
02 postal code	02 depth	02 unimproved code	02 year of sale
	03 acres	03 tax class	03 month of sale
15 <u>MUNICIPAL AREA CODES</u>	04 variance	04 special roll	04 sale amount
01 ward		05 levy control	05 type of sale
02 poll	40 <u>PROPERTY SUMMARY</u>	06 corporation	06 ratio assessment/sale
03 poll suffix	01 total assessment	07 school support split	
04 school area codes	02 total residential	08 occupant realty	
05 special rate areas	03 total commercial	09 business	
	04 total exempt	10 business assessment	
20 <u>ADDRESS</u>		11 year of change	
01 street number	45 <u>PROPERTY PLANNING</u>	12 month of change	
02 street qual.	01 construction year	13 authority for change	
03 street name	02 property code	14 reason for change	
04 street type	03 number of stories		
05 street direction	04 ground floor area		
06 apt. unit	05 total floor area		
	06 number of parking spaces		
	07 dwelling code		
	08 number of bachelor units		
	09 one bedrooms		
	10 two bedrooms		
	11 three bedrooms		
	12 over three bedrooms		
			70 <u>RENTAL</u>
			01 furnished or unfurnished
			02 year of effective rental
			03 actual rent
			04 estimated rent
			05 light
			06 heat
			07 water
			08 taxes
			09 linen
			10 parking
			11 other

Figure 1.3

(2) The Appraisal Programme

The valuation programme, whether it is undertaken by an assessor or an appraiser, is largely determined by the method of valuation employed. Often referred to as the appraisal process, a valuation programme involves the systematic and logical collection of data, the analysis and interpretation of those data and the estimation of market value. Since assessors must make valuations for a large number of properties in a limited period of time, they are forced to compromise, to some extent, between using refined valuation methods and completing the assessment roll in the prescribed period. Such a compromise need not, and should not, lead to an inferior valuation. Indeed, a mass valuation programme has an important advantage over an individual valuation prepared by an appraiser as it provides the assessor with more extensive market data than any individual appraiser can possibly collect.

In a mass valuation programme such as that undertaken by an assessor, a preliminary survey should be made to obtain a general familiarity with the area and to determine the order in which the work will be done. While the survey is being made a procedure for data collection should be established. Much of the data, such as those provided from the Registry and Land Titles Office, the Municipal Building Inspector and the local sales recording service, can be collected and posted to appraisal cards by clerical staff. The rest of the data, which is provided by interviews and inspections of the properties, should be gathered and recorded by the 'field' assessors.

There are three broad classifications of data that are needed by the assessor in order to analyze activity in the real property market.

- (i) Sales - The sale of property is a direct estimate of the value that the market places on the property. The sale price, which reflects the supply of, and demand for, the property at

a given point in time, is a measure of the value of the benefits that can be derived from the property. That is, sale price is a measure of the productivity of the property under given market conditions;

- (ii) Income - The money produced by a property reflects the price that the market places on the annual value of the benefits derived from it. The income, when properly capitalized, provides an estimate of the value of the property;
- (iii) Cost - The cost of production of a property is not directly influenced by the supply of, and demand for, benefits derived from the property. It provides a useful indication of market value since the market values of new properties will seldom be less than their costs of production. On the other hand, cost of acquisition provides an estimate of the maximum amount an investor will pay to obtain a new property that produces benefits of a given value.

There are three methods of valuation, each of which can be recognized by the data on which it is based:

- (i) The comparative sales method is the most realistic of all valuation methods. The larger the number of sales of similar properties that occur, the more useful this method becomes;
- (ii) The income capitalization method is excellent for valuing properties that produce a money income to the owner;
- (iii) The replacement cost less depreciation method can be applied to all types of buildings. The major weakness of this approach is that it does not measure property value directly.

Data from each of these methods should be gathered and recorded separately so that, whenever necessary, the value estimates produced by them can be checked against one another and the final value estimates of market value sub-

stantiated. The analysis of the data should not be completed until all the available information has been accumulated.

The value estimates produced by the three methods of valuation will not coincide exactly even though they are estimates of the same thing - market value. Essentially, discrepancies will arise because there are imperfections in the market. If the economy were perfectly competitive, the estimates produced by all three methods would be identical.

Inadequate data, which may even preclude the use of one or two of the methods, is another reason for discrepancies in the various estimates. Whatever the reason, the estimates from each method should not be averaged arithmetically to produce a final estimate of market value. To be valid, the estimates of market value can be substantiated only if the estimates from each method are compared and weighted according to the adequacy of the information available.

The valuation programme thus consists of five steps, each of which is a separate and distinct function:

- (i) Make a preliminary survey of the properties;
- (ii) Record all available data;
- (iii) Analyze the data to obtain value estimates;
- (iv) Substantiate the value estimates;
- (v) Make final estimates of value of each property.

The first two steps outlined above, form the data collection stage of the appraisal programme.

(a) Cost Appraisal Cards

The recording of available valuation data on each property and assessable unit is done on cost appraisal cards which have been specially designed for specific land uses:

Residential	see Figure 1.3(a) & (b)
Farm	see Figure 1.4(a) & (b)
Commercial	see Figure 1.5(a) , (b) , (c) & (d)
Industrial	see Figure 1.6(a) & (b)
Apartment	see Figure 1.7(a) & (b)

Figure 1.3(a)

RESIDENTIAL CARD---Front

MUNICIPALITY OF										LOT DESCRIPTION										CTY										MUN										WARD										PROPERTY										TENANT									
COUNTY/DISTRICT OF										PROPERTY ADDRESS										METER NUMBER										SHEET										OF										SHEETS																			
BUILDING DESCRIPTION										ROOM & INTERIOR FINISH DETAIL										EXTERIOR DESCRIPTION																																																	
CLASS & SHAPE		FOUNDATION		FLOOR JOISTS		HEATING		ROOMS		FLOORS		FLOOR FINISH		WALLS		CEILING		EXTERIOR		ROOF																																																	
ALL	UPPER STY %	CON BLK	1st " x "	"	"	HOT WATER	ALL	B	1	2	3	HW	SW	TI	BDLM	PL	DW	PA	PL	DW	TI	BRICK	FLAT	/4	PITCH																																												
1ST		CONCRETE				STEAM																BLOCK	GABLE	/4																																													
2ND		REIN CON				RADIANT	ENT. HALL															SIDING	HIP	/4																																													
		BRICK			SUB-FLR	FORCED	LIVING															ALUM	WOOD	/4																																													
	STOREYS	WOOD				GRAVITY	ONING															STUCCO		/4																																													
	SPLIT LEVEL	STONE			CON. SLAB	ELECTRICAL	DEN															STONE																																															
		POST/PIERS				PIPELESS																SHINGLE																																															
	TYPE	BASEMENT		STRUCTURAL			BEO															INSUL																																															
DESIGN	USE						BEO															ROLL SOG																																															
SINGLE		FULL	CON	PART	FRAMING	CENTRAL AIR CONO.																																																															
SEMI DET.		HEIGHT				FIREPLACES	REC. ROOM																																																														
DUPLEX							FAM. ROOM																																																														
APARTMENT																																																																					
		CRAWL SPACE			BLOCK	Basn't	KITCHEN																																																														
		CON		DIRT	BRICK	1st. Flr.																																																															
	UNITS	HEIGHT																																																																			
YEAR BUILT		NORMAL % GOOD		SPECIAL FEATURES.																																																																	
	R. E. L.	EFF. AGE	TABLE	% GOOD																																																																	
CONDITION																																																																					
CALCULATION SUMMARY										SALES INFORMATION																																																											
TOTAL R C N					TOTAL R C N					MEASURER					OATE					INSTR NO					CONSIDERATION					REMARKS																																							
LOCAL MODIFIER					LOCAL MODIFIER					ASSESSOR																																																											
NORMAL % GOOD					NORMAL % GOOD					CALCULATOR																																																											
ADDITIVE VALUE					ADDITIVE VALUE					CHECKER																																																											
										COURT					DATE					RESULT																																																	
					BLDG																																																																
					SITE																																																																
TOTAL					TOTAL																																																																

Figure 1.3(b)

RESIDENTIAL CARD---Rear

[illegible]

Figure 1.4(a)

FARM CARD---Front

MUNICIPALITY OF		LEGAL DESCRIPTION										CTY		MUN	WARD	PROPERTY		TENANT	
COUNTY / DISTRICT OF																			
PROPERTY ADDRESS												NO. OF ACRES		SHEET		OF		SHEETS	
PARCEL NUMBER AND ACREAGE		1--	2--	3--	4--	5--	6--	LAND CLASSIFICATION			CLIMATIC ZONE		SALES INFORMATION						
SOIL	SAND	10 - 20						PARCEL NO.	SOIL CLASS	SOIL POINTS	ACRES	RATE	VALUE	DATE	INSTR. NO.	CONSIDERATION	ACRES		
TEXTURE	SANDY LOAM	5																	
	LOAM, SILT LOAM	0																	
	CLAY LOAM	5																	
	CLAY	10 - 15																	
TOPOGRAPHY	LEVEL	0																	
	GENTLY SLOPING	5																	
	ROLLING	10																	
	HILLY	15 - 25																	
	STEEP	30 - 65																	
								SPECIAL DEDUCTIONS			TOTAL								
STONINESS	STONE FREE	0																	
	MODERATE STONE	5 - 15																	
	VERY STONY	20 - 40																	
DRAINAGE	RAPID	15 - 25																	
	GOOD	0																	
	FAIR	5																	
	POOR	20 - 40																	
								SPECIAL DEDUCTIONS			TOTAL								
FLOODING	NO FLOODING	0																	
	FLOODING	10 - 30																	
EROSION	NONE	0																	
	MODERATE	10																	
	SEVERE	20																	
DEPTH TO BEDROCK	DEEP (OVER 3 FT.)	0																	
	MODERATE (2' TO 3')	20																	
	SHALLOW (3" TO 1' 6")	30 - 65																	
TOTAL POINTS DEDUCTED																			
GRADE POINTS (REMAINDER OF 100)																			
CLASS																			
SUB TOTAL R.C.N.L.D.																			
SHEET NO.	SUB TOTAL R.C.N.L.D.																		
TOTAL R.C.N.L.D. FARM OUT-BUILDINGS																			
SHEET NO.	FARM RESIDENCE																		
TOTAL VALUE ALL BUILDINGS																			
LAND VALUE																			
SHEET NO.	LAND VALUE																		
TOTAL VALUE																			
D.M.A. 511																			
INDICATE NORTH																			
D.M.A. A.D. F. OCT. 1973																			

FARM CARD---Rear

1-15

COMMERCIAL CARD Sheet 1 Front

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Figure 1.5(b)

COMMERCIAL CARD Sheet 1 Rear

STORE FRUIT CALCULATIONS

BUILDING DIAGRAM

INDICATE NORTH

[illegible]

SCALE: 1" =

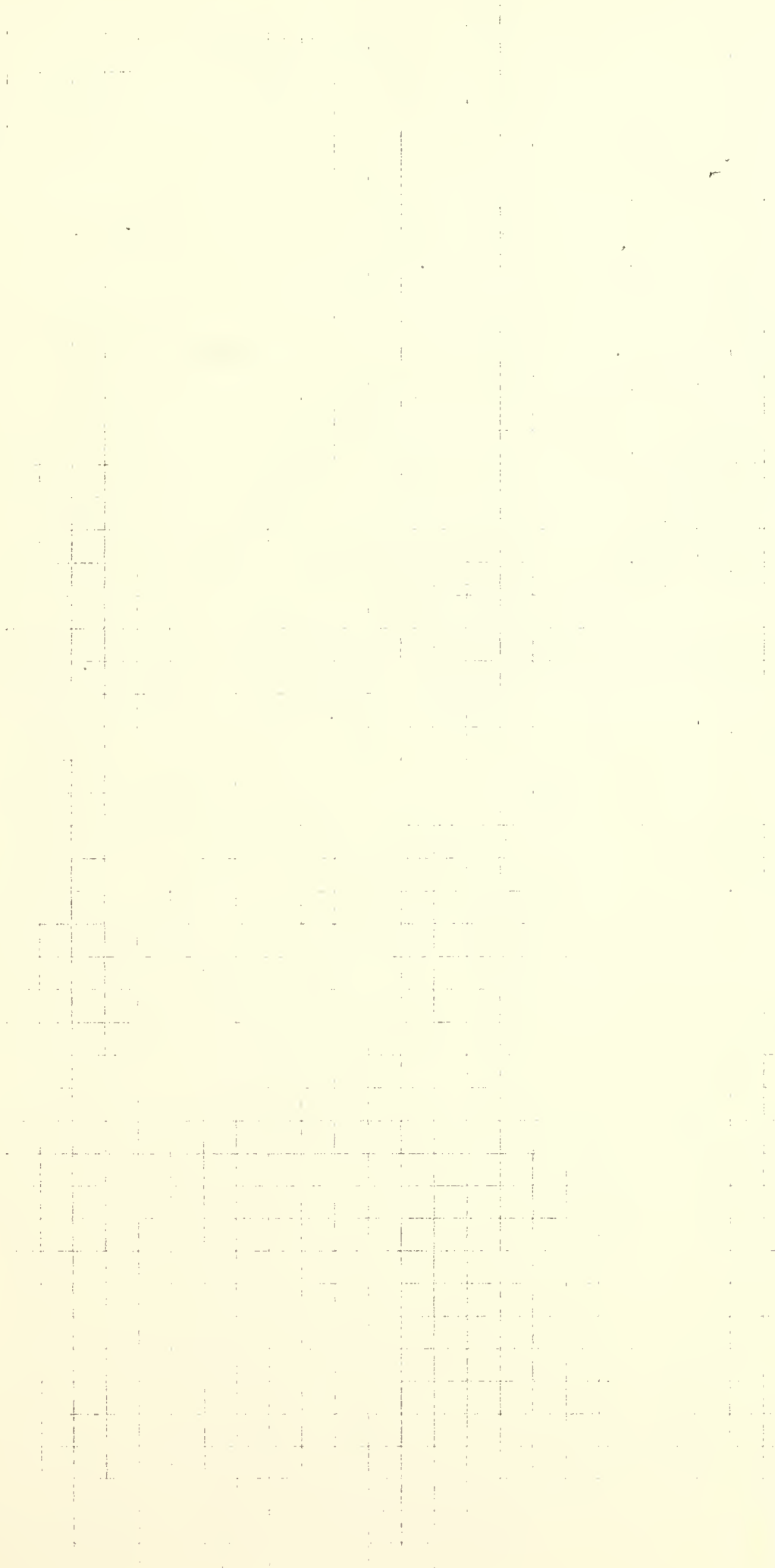
COMMERCIAL CARD Sheet 2 Front

DATA	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600
DATA	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600

Figure 1.5 (d)

COMMERCIAL CARD Sheet 2 Rear

MASTER BUILDING DIAGRAM



SCALE 1" =

INDICATE NORTH

Figure 1.6(a)

INDUSTRIAL CARD--front

MUNICIPALITY OF		LOT DESCRIPTION			CITY				MUN. WARD		PROPERTY		TENANT	
COUNTY / DISTRICT OF		OWNER												
PROPERTY ADDRESS		SHEET 1 OF 3 SHEETS												
BUILDING NO.		1	2	3	BUILDING NO.		1	2	SHEET		OF	SHEET-S		
STOREYS & HT.	HT.	HT.		HT.	AREA								3	
SIZE					PERIMETER									
CLASS & DESIGN					SECT. & PAGE OF MANUAL									
FOUNDATION					BASIC RATE									
FLOOR STRUCTURE					AREA ADJ.									
STR. FRAME & SPAN					HEIGHT ADJ.									
EXTERIOR WALLS					ADJ.									
ROOF STRUCTURE					HEATING, ETC.									
ELECTRICAL					SPRINKLERS									
PLUMBING														
HEATING, ETC.					NET RATE									
SPRINKLERS					R.C.N.									
EFFECTIVE AGE					MISC ADD. (OVER)									
CONDITION					TOTAL R.C.N.									
PRESENT USE					LOCAL MOD.									
FLOORS					NORMAL % GOOD									
INTERIOR FINISHED AREAS					R.C.L.N.D.									
CEILINGS					OBSCULESCENCE									
PARTITIONS														
					NET VALUE									
					SHEET TOTAL									

INDUSTRIAL CARD--rear

SCALE: 1" =

APARTMENT CARD (Draft)---Front

DMA AD APT FEB 1971

Figure 1.7(b)

[illegible]

It should be noted that each of the four appraisal cards allows space for sales information. This is usually obtained from the Registry or Land Titles Office(s), and is entered on the Sales Record form (Figure 1.11) discussed in Section B, Part (1) of this Division.

The actual methodology involved in the use of each cost appraisal card is taught in detail in the various in-service training course given by the Valuation Section of the Assessment Education Branch.

Most of the data collected on the cost appraisal forms can be classified under five basic headings:

- Design
- Character of Construction
- Quality of Construction
- Shape
- Size

Two other types of information can be recorded:

- Court Data
- Sales Information

It should also be noted that all the cost appraisal cards allocate considerable space for intermediate and final calculations of value which in essence makes the cards data processing forms as well.

There is considerable variation in the amount of information collected in different parts of the province. Table 1.1 illustrates the local variations in data collected on the Residential Appraisal Card.

Table 1.1
Regional Variations in Residential
Appraisal Card Use

In answer to an I.B.M. query made in 1970, 14 Regions said that they will collect all of the fields on the Standard Residential Appraisal Card, if possible. Six Regions did not reply to the question. These were Huron-Perth, Lambton-Kent, Waterloo, Simcoe, Ottawa-Carleton, and Ontario. The following 10 Regions do not collect the fields indicated:

The Metropolitan Toronto Regions:

Sales Information, Court Decisions, Calculation, Site Dimensions, Site Services, Topography, Calculation of Site Value, Construction Period.

Lennox and Addington, Frontenac:

Court Decisions

Cochrane-Timiskaming:

Sales Information, Court Decisions, Construction record, Site Services, Topography

Thunder Bay-Kenora-Rainy River:

Court Decisions, Construction Record.

Lanark, Leeds and Grenville:

Court Decisions

Halton-Peel:

Building Description, Room and Interior Finish Detail, Exterior Description, Miscellaneous Structures, Site Services, Topography, Construction Record.

Muskoka:

Sales Information, Court Decisions, Site Dimensions, Construction Record.

(b) Income Appraisal Card

A second type of appraisal form is the Income Appraisal Card. Although the sample included herein is obsolete (see Figure 1.8) it gives some indication of the data requirements for the income valuation technique.

The type of information required includes:

Gross Annual Income (rent)
Expenditures
Reserves

As in the cost appraisal cards there are spaces for computing intermediate and final figures related to the ultimate property assessment. These calculations are considered

Figure 1.8(a)

INCOME APPRAISAL CARD - front (not official)

DESCRIPTION

MUNICIPALITY

ROLL NO.

PROPERTY ADDRESS		COUNTY OR DISTRICT		INCOME		CAPITALIZATION RATE	
OWNER	OCCUPANT						
GROSS ANNUAL INCOME - 100% OCCUPANCY AT MARKET RENT							
MONTHLY		ANNUAL					
Apartment	X 12	:	:				
Store	X 12	:	:				
Office	X 12	:	:				
Warehouse	X 12	:	:				
Garage	X 12	:	:				
Parking	X 12	:	:				
Other	X 12	:	:				
1: TOTAL GROSS INCOME		:	:				
Allowance for Vacancy		:	:				
Allowance for Collection Loss		:	:				
2: TOTAL LOSS		:	:				
3: EFFECTIVE GROSS INCOME		:	:				
4: TOTAL ANNUAL EXPENDITURE (Page 2)		:	:				
5: TOTAL NET INCOME (3) - (4)		:	:				
PROPERTY REVERSION TECHNIQUE							
1. Sales of the Income Stream:							
2. Capitalization Rate: % or Factor: (F):							
3. Capital Value of the Income Stream:							
(a) $F = \frac{1}{F}$:	:				
(b) $V = \frac{1}{F}$:	:				
4. Repetitive Value of Property							
% of Capital Value (3) \$:	:				
Capital Value		:	:				
5. Repetitive Value of Income Stream		:	:				
6. Repetitive Value of Reversionary Value		:	:				
(7) $V(5)$ \$:	:				
7. Capitalized Future Value of 2 years		:	:				
(3) - (7) \$:	:				
1. SUMMARY METHOD - Yield Rate %							
Safe Rate		:	:				
Allowance for Risk		:	:				
Allowance for Non Liquidity		:	:				
Allowance for Management		:	:				
Yield Rate		:	:				
2. FUND OF INVESTMENT - Yield Rate %							
Investment		:	:				
% of Tot. X Int.		:	:				
1st Fund		:	:				
2nd Fund		:	:				
3rd Fund		:	:				
Yield Rate		:	:				
3. MARKET COMPARISON - Yield Rate %							
Safe Rate		:	:				
Net Income		:	:				
% of Value to be Amortized		:	:				
% of Sale Price		:	:				
Amortization Rate		:	:				
Rate for Property Tax		:	:				
Property Taxes		:	:				
% of Sale Price \$:	:				
Amortization Allowance		:	:				
(2) X (1)		:	:				
% of Annual Amortization		:	:				
(3) - (1)		:	:				
Rate after Taxes and Amortization		:	:				
(2) - (3) \$:	:				
10. Yield Rate:		:	:				
$\frac{1}{V} = R$:	:				
(9) ÷ (1) \$:	:				
DATE:							
ASSESSOR:							
REMARKS							

Figure 1.8(b)

INCOME APPRAISAL CARD - rear (not official)
EXPENDITURES

GENERAL EXPENSES				RESERVES FOR REPLACEMENT			
	Current	19	19	Adjusted			
GENERAL EXPENSES:							
Management							
Advertising							
Legal & Audit Fees							
Fuel							
Electricity							
Water							
Janitor							
1. TOTAL GENERAL EXPENSES :							
FIXED CHARGES:							
Insurance							
Elevator Contract							
2. TOTAL FIXED CHARGES :							
SERVICES - MAINTENANCE							
Painting							
Plumbing							
Heating							
Landscaping							
Repairs							
3. TOTAL M.P. & MAINT. :							
UNPREDICTABLE EXPENSES							
4. TOTAL UNP. EXPENSES :							
TOTAL EXPENSES (1 + 2 + 3 + 4) :							
TOTAL ANNUAL RESERVES FOR REPLACEMENT :							
TOTAL ANNUAL EXPENDITURE (EXPENSES + RESERVES) :							

RESERVES FOR REPLACEMENT							
UNIT	A.C.R.	LIFE	RECAPTURE	INTEREST	TAXES	TOTAL	ANNUAL CHARGES
5. TOTAL ANNUAL RESERVES :							
PROPERTY RENTAL RECORD							
UNIT	SIZE	TENANT	RENTAL BASIS	19		19	
				MONTHLY RENT	19	MONTHLY RENT	19
				19	19	19	19
				19	19	19	19
				19	19	19	19
TYPE OF PROPERTY: MARKET RENT - F.F. \$ S.F. \$							
Land Residual				Building Residual			
1. Net Annual Income \$							
2. Expected Return on Bldg. \$							
3. Income Residual to Land \$							
4. Capitalization Rate %							
5. Capitalized Value of Land \$							
6. Capitalized Value of Property \$							
7. Capitalized Value of Property \$							
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99. Capitalized Value of Property \$							
100. Capitalized Value of Property \$							

in detail in Division IV on Data Processing. For the specific methodology used in the income approach to valuation refer to Appraisal Notes for the Assessor by A. N. MacKay.

(c) Sales Appraisal Cards (Condominiums)

A third type of appraisal form is one in which is used to collect available data necessary for carrying out a comparative sales method of valuation. Fig 1.9 (a & b) and 1.10 are three collection forms from a recently developed system for analysis of market sales for the purposes of condominium assessment.

Fig 1.9(a)-Condominium Development Master (Form 1A)

This is the front side of a two-sided form designed to summarize the main characteristics of the condominium development involved (i.e. apartment or townhouse); whether the condominium is a conversion or purpose-built; the type and extent of available common facilities; and a summary of the distribution of various types of units though-out the multi-residential structure(s). Readers may be interested to note the subdivision of apartment condominiums according to the number of storeys found in member units. This is an attempt to recognize the distinct type of development sometimes referred to as the "stratawalk" or "stacked townhouse".

Fig. 1.9(b)-Summary of Individual Unit Characteristics (Form 1B)

On the rear side of the first data form is a summary of the physical characteristics of each type of unit. Inherent in the list of possible characteristics is the recognition of special features exclusive to townhouses or apartments, as the case may be. Essentially, each characteristic has been included because it has been the consensus either of assessors or of sellers that that particular item or group of items has an influence on selling price.

Fig. 1.10-Condominium Site Plans (Form 2)

It is envisaged that each condominium file will possess three out of four possible types of plans:

FORM 1A

CONDOMINIUM DEVELOPMENT MASTER

1-29

FORM: 1 B

1-30

Figure 1.10

CONDOMINIUM NUMBER _____		CONDOMINIUM SITE PLAN (s)	
MASTER PLAN <input type="checkbox"/>	BUILDING PLAN <input type="checkbox"/>	FLOOR PLAN <input type="checkbox"/>	UNIT LAYOUT <input type="checkbox"/>
TITLE _____		TITLE _____	
<div></div>			

- (a) Development Master Plan
- (b) Building Plan(s) (Townhouse)
- (c) Floor Plan(s) (Apartments)
- (d) Unit Layout(s)

We consider that site diagrams will play a very essential role in assisting the assessor in valuation. The relative location of desirable and/or undesirable features in close proximity to the development might be included to help explain anomalies in price. (i.e. the effect of ravines or noisy expressways). Site plans also permit the assessor to envisage the possible effects of location of certain units relative to others (i.e. units at the end of buildings). Finally, the influence of various types of unit layout on price can be more easily determined when a visual picture or diagram is available.

When completed the above forms will contain the property data necessary to perform the actual sales analysis and subsequent valuation procedure for each condominium structure. The forms used to collect the sales information appear in the next section (B(1)).

(B) Data Supplied to the Assessment Division

- (1) Registry and Land Titles Office
 - (a) Sales Information

From Registry and Land Titles Offices all regions receive copies of the deeds for properties which are sold. These copies are used to update appraisal cards, and Assessment Data Sheets. The sales information is also used to update assessment maps. The actual volume of sales information handled by various regional offices in 1970 is revealed in Table 1.2 Figure 1.13 illustrates the flow of this sales data, while Figure 1.11 is a form which may be used to record sales data needed for assessment purposes.

As well, sales information serves as the basis for a number of different types of analyses designed to relate sales to actual assessment. These are discussed below:

SALES DATA		Table 1.2			
REGIONS	SALES DATA RECORDED ON DRS?	OTHER SALES HISTORY INFORMATION FROM REGISTRY OFFICE?	SALES RECORDED PER YEAR	TIME TO GET SALES RECORDED ON DRS (WEEKS)	# OF STAFF AND % OF TIME SPENT RECORDING SALES ON DRS.
PRESCOTT, etc.	Yes	No	24,000	4	2 x 100
LANARK, ETC.	Yes	Yes	6-8,000	6	1 x 100
OTTAWA-CARLETON	Yes	Yes	14,000	8	2 x 100
RENFREW	Yes	No	2,000	4	2 x 50
FRONTENAC-LENNOX	No	Yes	12,000	2	2 x 80
HASTINGS-PRINCE EDWARD	Yes	Yes	5,000	2	
HALIBURTON, etc.	Yes	No	7,000	2	6 x 10
NORTHUMBERLAND, etc.	Yes	Yes	6,500	2	2 x 75
TORONTO	Yes	Yes	20,000	4-6	5 x 100
NORTH YORK	Yes	Yes	10,000	4-6	2 x 100
SCARBOROUGH-EAST YORK	Yes	Yes	10,000	4-6	3 x 100
ETOBICOKE-YORK	Yes	Yes	10,000	4-6	3 x 100
ONTARIO	No	Yes	7,500		
YORK	No	Yes	10,000	8	
HALTON-PEEL	Partly	Partly	18,000	3	2 x 75
SIMCOE	No	Yes	12,000	1	2 x 100
MUSKOKA	No	Yes	7,000	2	
NIAGARA	No	No	15,120		
WENTWORTH	Yes	Yes	140,000	2-3	
BRANT, etc.	Yes	Yes	7,000	6	1 x 25
WATERLOO	Yes	Yes	7-8,000	1-2	1 x 100
DUFFERIN, etc.	No	Yes	7,000	4	2 x 100
ELGIN, etc.	No	Yes	15,500	2	4 x 100
HURON-PERTH	No	No	2,550	6	4 x 25
BRUCE-GREY	Yes	Yes	10,000	4	1 x 35
KENT-LAMBTON	No	No	8,000	1	2 x 50
ESSEX	Yes	Yes	12,000	1-2	2 x 50
NIPISSING, etc.					
COCHPANE-TIMISKAMING	No	Yes	8,000		1 x 100
MANITOULIN-SUDBURY					
ALGOMA	No	No	9,000	2	1 x 40
KENORA-RAINY RIVER	No	No	8,000	4	3+ x 100

DMA / AD / SRS / 70

CODES

COUNTY

MUNICIPALITY

SHEET NUMBER.

TYPE OF SALE	PAUPERTY CLASS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
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(i) Local Modifier

It is impossible to prepare a manual of construction costs that can be applied across a province as large as Ontario without making adjustments for area cost differentials. Furthermore, costs of construction vary over time as well as from one area to another.

The method of adjustment recommended by the Assessment Division is based on an analysis of local sales. The advantages of using a local modifier based on sales to adjust costs are:

- (i) It is relatively easy to prepare;
- (ii) It is easy to apply, provided the Handbook of Cost Factors is used;
- (iii) It reflects current conditions in the local real estate market rather than in the local construction industry;
- (iv) It provides an estimate of the market value of a particular class of building.

The last point bears expansion. The local modifier shows the relationship between the cost of constructing a particular class of building in Metropolitan Toronto at a given period of time, and the probable sale price of a new building of that class in another area at another time. Therefore, the local modifier provides an estimate of replacement cost new or reproduction cost new or any other cost.

The data collection and initial decision on sale information applicability takes place in the following way:

- (i) Record all property sales that include recently-constructed buildings. Sales of buildings that were constructed more than two years before the modifier is calculated should not be included in the analysis.
- (ii) Reject those sales not typical of current

market transactions. Alternatively, depending on the size of the sample, adjust the unusual sales to reflect normal transactions.

- (iii) Estimate the sale value of each building by deducting the acquisition cost of the land from the sale price of the property.

(ii) & (iii) Depreciation and Comparative Sales Analysis

There is a basic similarity between the data needed for both the modifier depreciation table and comparatives sales analysis. The actual method of determining the figures does vary, of course, and is the subject of further discussion in Division IV and VI.

Continuing with the data collection procedures for condominium assessment as first outlined in Part A Data Collected by the Assessment Division, the key ingredient in any comparative sales analysis is obviously the sales data itself. Because of the unique and varied nature of condominium sales information, the following forms have been designed:

Fig 1.12(a)-Condominium Sales Record (Form 3A)

The front portion of the two-sided listing form for condominium unit transactions is probably the most important data collection medium of the new condominium valuation system. It is intended to record sales of similar or comparable unit types together. The form allows up to two sales to be recorded and is designed to take into account two-stage collection procedure involved in obtaining sales information from Land Registration Offices (i.e. (i) listing instrument numbers from the Condominium Parcel Register, and (ii) Searching the actual listed documents for chattels on financing where required). The form also provides space for the assessor to make adjustment. Allowance is also made for distinguishing between sales of units on different floors in an apartment building, or in different buildings of a townhouse development.

Fig 1.12(b)-Condominium Financing Details

The reverse side of the Condominium Unit Transaction Form is designed for the recording of financing details. It mirrors the

FORM 3A

[illegible]

Figure 1.12(b)

FORM 3B

[illegible]

Sales Record Form inasmuch as it records financing information of only one unit type per sheet. Dates for up to two transactions may be recorded for each unit. Such information is essential so that one may determine whether "typical financing" has been applied in each transaction.

(b) Property Descriptions

Property descriptions form the basis of the assessment mapping programme. Where the property maps are already in existence for an area the collection of the deeds of all property sold necessitates only an updating function. The actual alteration of maps is necessary only when the previous property unit is sub-divided or broken up (see Figure 1.13) If, however, property maps in an area are non-existent or only partially complete, the property description is obtained by searching titles in the Registry or Land Titles Office. The technique involved in title searching varies according to type of land registration method prevalent in an area. For information on the different techniques involved in title searching the reader is referred to the recent publication, The Law of Real Property and the Assessor by the Assessment Standards Branch. Information as to the method involved in using property descriptions for assessment mapping is discussed in Assessment Mapping by H. Fletcher.

(2) Other Government Departments

A number of other government agencies form sources of data for the Assessment Division. It is not intended to give a complete list of all agencies supplying data to the Division. The real aim here is to familiarize the reader with the wide variety of sources supplying information which aid the assessment function.

DATA FLOW BETWEEN REGISTRY AND LAND TITLES OFFICES
AND THE ASSESSMENT DIVISION

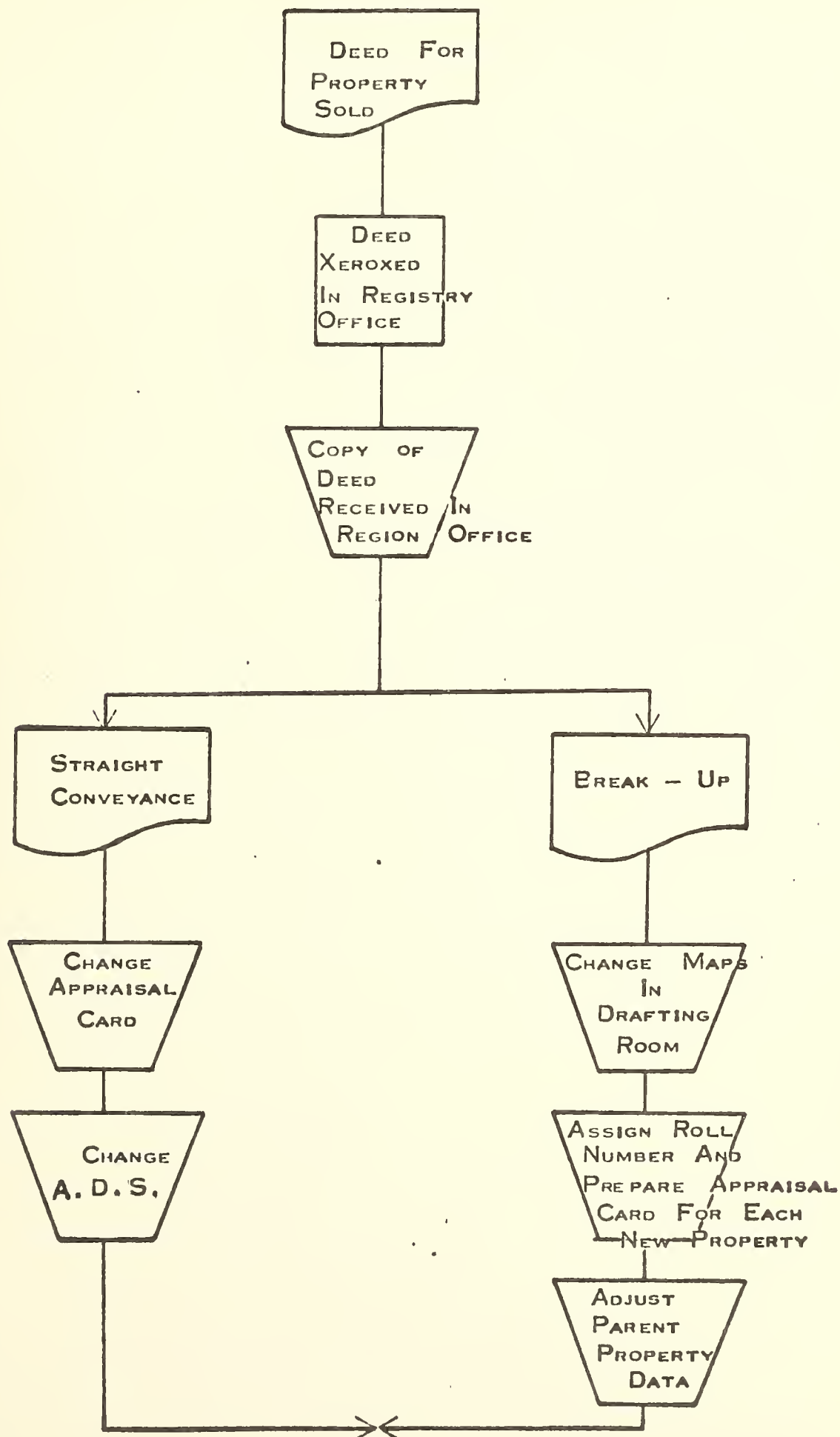


Figure 1.13

(a) Federal Government Agencies

These include such federal government departments as Statistics Canada, the Agricultural Development and Rehabilitation Administration (A.R.D.A.), and the National Housing Administration (N.H.A.). Statistics Canada supplies all the census data on housing construction, population, social and economic conditions so important in determining the conditions influencing real estate markets. ARDA is largely responsible for developing the Land Capability Classification and maps used in evaluating farm soils, while NHA is responsible for setting both the lending rates and borrowing eligibility for most real estate housing mortgages in Canada.

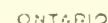
(b) Provincial Ministries and Agencies

Among the Provincial agencies and ministries supplying data to the Assessment Division are the Ontario Hydro Electric Power Commission, the Ontario Housing Corporation, the Ministry of Transportation and Communications, the Ministry of the Attorney General, which supplies information on assessment appeals, the Ministry of Consumer and Corporate Relations, which is responsible for registration of land transfers, and the Ministry of Treasury, Economics, and Intergovernmental Affairs (especially the Central Statistical Services, Taxation and Fiscal Policy Division, Urban and Regional Planning Division, and Municipal Services Division of this particular Ministry).

(c) Municipal Government

In the realm of municipal government, Planning Departments provide information on by-laws and official plans, the Clerk or Treasurer on tax sales, and School boards on school enrolment and school support. As well, the Engineering sections of many municipal Public Works departments can supply much useful information on the location of property boundaries and utilities such as gas and oil pipelines. Finally, municipal governments are sources of information on

801 DAY STREET - TORONTO - ONTARIO



TO OBTAIN CONSTRUCTION COST DATA FROM CONTRACTORS

construction progress through their supply of building permits which are used to initiate changes under Section 43 of The Assessment Act.

(3) Construction Contractors

The Cost Analysis Section of the Assessment Standards Branch has the responsibility of developing and updating the Handbook of Cost Factors. Much of the information collected in this regard is supplied by building contractors. The type of data which is sought by the Cost Section is outlined in the sample questionnaire found in Figure 1.14

(4) Other Sources

In the area of assessment mapping there is a need to obtain information not always published or available elsewhere. An example of this is the case of maps drafted by the survey and/or engineering department of gas and oil pipeline companies which can be useful in the mapping function.

II. DATA CODING

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II. Data Coding

(1) Introduction

In January of 1970, a Committee was set up consisting of head-office personnel and members of the Area and Regional Offices. Their task was to design and implement a province-wide system of collecting, coding, inputting, computing and reporting assessment information. The existing situation at that time comprised very little uniformity amongst the regions in any aspect of assessment operations. Coding procedures were extremely inconsistent and coding applications were even more varied.

The Standard Assessment System Committee (as they were later called) proceeded to develop a workable system but were interrupted in Sept. of 1972 due to the advent of a new Enumeration Programme (see chapter I). As a result the subsequent legislative changes, but only as an interim measure, a system was implemented to standardize the existing state of affairs, including the present codes, which resulted in a situation where all Regions were basically following the same procedures of assessment information processing. A new assessment master file layout was also introduced which invariably introduced new codes and eliminated those which were obsolete. These codes and among other procedures were inserted into a manual entitled the Standard Assessment System Manual which each region received and basically followed. To ensure that these procedures were adhered to, the computer programmes used to manipulate the data were standardized

between two suppliers. A code which was not part of the program would be rejected until the proper code was inserted.

The disadvantages and complications of these sweeping changes were numerous. Many of the changes were poorly researched and the eventual result was a high degree of standardization of a "bad" system. However, this so-called Interim system provided a static situation whereby any subsequent study could be carried out with some common denominator and where the effects of any new codes or procedures could be adequately and uniformly measured.

(2) Codes used as part of the Standard Assessment System
(Interim).

The codes present in the Standard Assessment System Manual are intended for use on the Assessment Data Sheet. The following list is a summary of the types of codes that appear in the manual:

1. Roll Number
2. Action Codes
3. Municipal Area Codes
4. Property Summary
5. Occupant Tax Data
6. Property Planning Data
7. Occupant Planning Data
8. Name Data
9. Mailing Address
10. Property Address
11. Short Description
12. Full Description
13. Property Dimensions

Below is a sample of how the coding manual is set-up for "Property Dimensions".

ACRES

Purpose:

To record the area in acres of the property.

Coding:

1. Numeric value with three decimal positions.
2. Blank if to be calculated using frontage and depth.

NOTE: If changing existing property dimensions, (using action code "C"), and acreage is present on the file, then recalculation of acreage will only be done if this field contains the field delete character "\$", otherwise existing acreage on the file will be retained.

Rules:

1. Owner record only (tenant '0000').
2. Must be present unless field size exceeded or to be calculated.
3. Will always be calculated if both frontage and depth are present and ACRES is blank or zero.

Calculation:

Frontage times Depth divided by 43,560.

NOTE: Irregular shaped properties must be coded with the actual acreage and the property must then be described in the "Full Property Description."
Zeros coded in the "ACRES" field will not prevent calculation: zeros only prevent the error message, "ACRES SET TO ZERO", from printing on the Update Error Listing.

(3) Revised Coding Manual.

As explained in an earlier section, the codes that appear in the Standard Assessment System Manual have been selected very hastily and with little consideration for their usefulness outside the Division. Therefore, a Revised Coding Manual has been proposed which has the following format;

CODE: B

UNIMPROVED CODE ALLOWED: Yes

TAX CLASS: C

BUSINESS PERCENTAGE REQUIRED: Yes

BUSINESS PERCENTAGE: 075

USE: To identify land and buildings occupied and used for the purpose of a Brewery. This code does not include a distillery or a distillery of industrial alcohol.

S/R ALLOWED: No

LEVY CONTROL ALLOWED: No

STATUTORY REFERENCES: The Assessment Act, R.S.O. 1970,c32,
7(1)(b).

CROSS REFERENCES: D 1A,DIS

This manual will be in use very shortly and will replace the coding documentation now contained in the SAS Manual. The new Manual will contain codes and coding methods that are both useful to the needs of the Division as well as those requirements from external users. It will also be set up to facilitate any necessary revisions or additions that will assuredly occur as the programme develops.

(4) Other Codes

(a) Condominium Valuation

In Part I of this book, the forms used in the collection phase of a sales analysis approach to condominium assessment were discussed. To prepare for the actual analysis stage of the procedure, some of the collected property and sales data is coded to facilitate subsequent computer methods of manipulation and print-out. Fig. 2.1 is a sample of the form used to enter the condominium data into the computer.

(b) Oshawa Sales Study

The Methodology Section of the Assessment Standards Branch has developed a number of special codes for their Oshawa Sales Study. This study, discussed in more detail in the paper Multivariate Analysis and Residential Property Valuation in Ontario for the most part used data already collected by the Division. The procedure involved varies from normal practice in that some of that data presently recorded in alphanumeric form is recorded in numeric. The procedure is set out as follows:

OSHAWA SALES STUDY

KEY TO DATA USED IN ANALYSIS

- A. SEQUENCE NUMBER - Sequence number of entry.
- B. ROLL NUMBER - "Standard" 19-digit roll number. See Data Collection Manual, p.17. Enter as set out at top of Appraisal Card.

Figure 2.1

FORM 3C CONDOMINIUM SALES ANALYSIS CODING SHEET																																																																															
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21																																							
SEQ. NO.	CN'TY.	MUN.	ASSESSMENT ROLL NUMBER (DIVIDED INTO THREE FIELDS OF 6 DIGITS)						COND. NO.	COND. TYPE	UNIT NO.	SUITE NO.	BEDRMS.	BLDG.	LEVEL	FLOOR	A/S.D.	NO. OF BATHRMS.	FIRST SALE		SECOND SALE		THIRD SALE		DATE MO. YR.																																																						
			PRICE	DATE MO. YR.	PRICE	DATE MO. YR.	PRICE	DATE MO. YR.																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

- C. DATE OF SALE Date on which transaction took place. From Registry document or back of Appraisal Card. First two digits describe month, second two describe year. See Data Collection Manual, p.53.
- D. CASH Total amount of cash exchanged in transaction. From Registry document or back of Appraisal Card. Enter to nearest dollar.
- E. TOTAL PRICE Total sale price from deed. Rounded to nearest dollar.
- F. SITE FRONTAGE From Appraisal Card, top right-hand corner. Enter to nearest foot.
- G. SITE DEPTH From Appraisal Card. Enter as with Site Frontage.
- H. SITE SHAPE Regular or Irregular. Irregular is indicated by "IRS", or similar abbreviation at top right-hand corner of Appraisal Card. If abbreviation does not appear, its shape is Regular.
- | | |
|-----------|---|
| Regular | 1 |
| Irregular | 2 |
- I. TOTAL FLOOR AREA- From Appraisal Card, bottom left area, entry "T" under "Local Improve". Include total living area excluding recreation rooms in basements.
- J. TOTAL NUMBER OF ROOMS From Appraisal Card, bottom lefthand corner, or top left area. A bathroom, attic or basement is not treated as a room.
- K. NUMBER OF BEDROOMS From Appraisal Card, top left area.
- L. NUMBER OF BATHROOMS From Appraisal Card, top left area, both "Rooms" and "Plumbing". A complete bathroom includes basin, toilet, and tub or shower. An extra basin and toilet is a "half Bathroom".

Check entry under "Rooms: with entry under "Plumbing" to ensure half bathrooms are distinguished from full bathrooms.

<u>Code:</u>	No Bathroom	10
	1 Bathroom	10
	1-½ Bathrooms.	15
	2 Bathrooms.	20
	2-½ Bathrooms.	25
	3 Bathrooms.	30
	3-½ Bathrooms.	35

etc

M. NUMBER OF STORIES- From Appraisal Card, left-hand corner.

If building is divided into sections, each with different numbers of stories, code section with largest floor area. If building is split level, with different numbers of stories on each level, code level with largest floor area code largest number of stories.

<u>Code:</u>	1 Storey	100
	1-¼ Stories.	125
	1-½ Stories.	150
	1-¾ Stories.	175
	2 Stories.	200
	2-¼ Stories.	225
	2-½ Stories.	250

etc

N. BUILDING DESIGN - From Appraisal Card, top left-hand corner, under "Type". In four classes.

<u>Code:</u>	Completely Detached, One Level	1
	Completely Detached, Split Level	2
	Semi-Detached, One Level	3
	Semi-Detached, Split Level	4

Code "split level" only when indicated under "Type".

O. BUILDING STRUCTURE - From Appraisal Card, top left area, under "External". In four classes.

<u>Code:</u>	Brick	1
	Other Stone or Concrete	2
	Brick Veneer	3
	Wood Frame and Siding	4

If different structures for different parts of building, code structure for largest floor area.

- P. BUILDING QUALITY - From Appraisal Card, centre area,
under "Building Value, Classification".
In nine classes.

<u>Code:</u>	Substandard	1
	Poor	2
	Average	3
	Medium	4
	Good	5
	Good - to Good	6
	Good	7
	Good +	8
	Excellent	9

If different qualities for different
parts of building, code quality for
largest floor area.

- Q. BUILDING AGE - From Appraisal Card, centre area, under
"Building Value, age or Year built".
Enter year built in full.

- R. CARPORT OR GARAGE - From Appraisal Card, bottom left area,
under both "Private Garage" and "Remarks".
In six classes.

<u>Code:</u>	No Carport or Garage	1
	Carport	2
	Single Garage Attached	3
	Single Garage Detached	4
	Double Garage Attached	5
	Double Garage Detached	6
	Single Basement	7
	Double Basement	8

A "Double Garage" is 16' or more in width.

(POOL)

<u>Code:</u>	Pool	1
	No Pool	

- S. COMMUNITY, NEIGHBOURHOOD, BLOCK - From Appraisal Card, centre-left area,
under "Local Improve". Enter any one-
digit third number from Appraisal Card
as two digits on Coding Card: e.g. enter
8-3-1 as 8301 or 4-3-7 as 4307 or 7-1-9
as 7109. Enter two-digit third numbers
as they first appear (7-1-13 as 7113 or
4-3-18 as 4318).

(c) Toronto Residential Appraisal Project (TRAP)

The success of the Oshawa Sales Study and other related work prompted the Valuation Section of the Assessment Standards Branch to continue with the research in developing an acceptable sales approach to valuation. The Toronto Residential Appraisal Project (TRAP) focused their efforts on specific areas in Metro Toronto and initially designed a system to record property and sales data for the existing appraisal cards.

The methods and codes used to document this source are contained in Table 2.1

(5) Addressing Systems

All large information systems depend on at least one method of indexing for purposes of organization and retrieval. In assessment the most obvious addressing or indexing system is based on the assessment roll number. This is a multi-purpose number which permits retrieval and/or sorting by county, municipality, ward, property or parcel. A second type of file indexing used to identify assessment is the name and address of each assessable person. Finally the description of assessed property serves as a means of file addressing. Each of the indexing systems mentioned possess various advantages and are necessary to fulfil the statutory requirements asked of assessors. All three of the methods used - the assessment roll number, mailing address, and property description - can be classified as 'geocodes', that is they are indexing systems based on geographical reference areas or points. Details of how to derive each index are outlined in the Data Collection Manual and are summarized below.

(i) (a) Assessment Roll Number (present system)

The Roll Number identifies every PROPERTY and every ASSESSABLE UNIT within a property. The Roll Number shows the following information:

1) COUNTY OR DISTRICT

PURPOSE	- to identify the county or district within which the property or assessable unit is situate
HOW RECORDED	- a 2 digit code
CODING SYSTEM	- see Code Book, pp. 1-53
USE	- mandatory

TORONTO RESIDENTIAL APPRAISAL PROJECT

PROPERTY CHARACTERISTICS

Location

Street Address

Roll Number: Ward, Division, Block

Site

Vacant Lot: Yes=1, No=2

Lot Frontage

Lot Depth

Lot Shape: Regular Shape=1

Irregular Shape=2

Lot Area: In Square Feet

Dwelling

No. Rooms

No. Bedrooms

No. Kitchens: Room with Kitchen

Facilities=05

Full Kitchen=10

Two Kitchens=20

etc.

Class and Shape (1st and 2nd Floors)

Structure: B=1

C=2

D/C, D+C=3

D=4

Quality: 5=50

5½=55

6=60

etc.

Shape: A=1, B=2, C=3, D=4

No. Stories: 1 Storey=100

1½ Storey=125

1¾ Storey=150

etc.

Split Level: No=1, Side Split=2,

Back Split=3

Design: Single Detached=1

Semi Detached=2

Duplex=3, Row=4

Basement Size: No Basement=1

Part Dirt=2, Full

Dirt=3, Part Concrete=

4, Full Concrete=5

Basement Height: 7 ft.=70

7½ ft.=75

etc.

No. Units: In this Address Only

Year Built

Effective Age

Percent Good

Condition: Good=1, Normal+=2,

Normal=3, Normal-=4, Fair=5

Heating: Hot Water=1, Steam=2,

Radiant=3, Forced=4, Gravity=5,

Electric=6, Pipeless or Other=7

Central Air Conditioning: Yes=1, No=2

No. Fireplaces

Exterior Finish:

Brick Yes=1, No=2

Shingle Yes=1, No=

Block " "

Insul " "

Alum. " "

Roll " "

Wood " "

Concret. " "

Stucco " "

Other " "

Stone " "

No. Bathrooms Above Basement:

½ Unit (Toilet)=05

One 3 Piece Unit=10

1½ Units=15

etc.

No. Bathrooms in Basement

Bathroom Quality (Above Basement):

Poor=1, Standard=2, Special=3

Date of Sale: Jan. 1971=0171

Feb. 1971=0271

etc.

Total Consideration

First Floor Area

Second Floor Area

Third Floor Area

Basement Finish: Not Finished=1

Rec room (rate \$2.50 or more)=2

Fin. Bas. (rate \$2.50 or more and
more than one room)=3

Bas. Apt. (rate is \$2.50 or more
with kitchen)=4

Finished Basement Floor Area

Total ACN

Recreational Amenities:

None=1, Pool=2, Sauna=3, Both=4

Garage

Design: No Garage or Carport=1, Carpt.=2

Single Detached=3, Attached=4, Bas.=5

Double " 6, " 7, " 8

Triple " 9, " 10, " 11

Structure:

B=1

C=2

C/D, C+D=3

D=4

No. Rooms in Garage

Table 2.1

2) MUNICIPALITY

- PURPOSE - to identify the city, town, village, etc., within which the property or assessable unit is situate.
- HOW RECORDED - a 2 digit code
- CODING SYSTEM - see Code Book, pp. 1-53
- USE - mandatory

3) WARD (map area)

- PURPOSE - to identify the ward in which the property or assessable unit is situate. In instances where a municipality is not divided into wards, it is possible to develop smaller geographic units referred to as MAP AREAS. Each MAP AREA corresponds in area to a ward if the municipality were, in fact, divided into wards.
- HOW RECORDED - a 2 digit code
- CODING SYSTEM - number from 01 to 99
- USE - optional as not all municipalities are divided into wards, and division into map areas may not be warranted.

4) PROPERTY

- PURPOSE - to identify the location of the particular property or assessable unit within the municipality and/or ward (map area).
- HOW RECORDED - a 9 digit code
- CODING SYSTEM - the coding system below
The system of numbering chosen should reflect the general situation in the particular jurisdiction, i.e. built-up area, rapidly expanding area, etc. This system is based on geographic and physical considerations below the ward level. It has the advantage of flexibility of application and, at the same time, avoids the disadvantages incurred when the polling subdivision is included in the roll number.

The following items are included in the property number:

PROPERTY NUMBER

Ward Div.	Map Subdivision	Parcel	Parcel Sub-Number
--------------	--------------------	--------	----------------------

(a)	(b)	(c)	(d)
-----	-----	-----	-----

4(a) WARD DIVISION (Map Sub-Area)

PURPOSE - large municipalities, such as Metro Toronto, which have divisions within wards, will fill in this column for each property and assessable unit.

HOW RECORDED - a 1 digit code

CODING SYSTEM - number from 0. to 9.

USE - optional

NOTE! In instances where a municipality has been divided into MAP AREAS rather than WARDS, each MAP AREA may be further divided into MAP SUB-AREAS when they correspond to WARD DIVISIONS.

4(b) MAP SUBDIVISION

PURPOSE - to identify within each ward (or map area) the smaller areas which correspond in AREA to polling subdivisions and which may, in fact, be polling subdivisions. This information is recorded for each property and each assessable unit.
- ward divisions (or map sub-areas) are also divided into map subdivisions.

HOW RECORDED - a 3 digit code

CODING SYSTEM - number from 010 to 990, or from 001 to 999

USE - mandatory

4 (c) PARCEL

- PURPOSE - to identify the particular parcel of land within the map subdivision. The information is recorded for each property and assessable unit.
- HOW RECORDED - a 3 digit code
- CODING SYSTEM - number from 101 to 990, or from 001 to 999.
- USE - mandatory

4 (d) PARCEL SUB-NUMBER

- PURPOSE - this allows for any splits of a parcel into smaller parcels
- HOW RECORDED - a 2 digit code
- CODING SYSTEM - number from 01 to 98
- USE - mandatory

NOTE! The code "99" is reserved for special use such as allowing the assessor to insert special comments about a property. This is done by repeating the previous parcel number, with the additional code "99" in the parcel sub-number on a second data sheet. The special comment is then printed on the second sheet.

e.g. DATA SHEET (1) Property No. 1,700,046,00 (identifies property)

DATA SHEET (2) repeated 1,700,046,99 (special comments)

- USE - it is mandatory to use some type of coding system to identify each property and each assessable unit of the property.

5) TENANT NUMBER

- PURPOSE - to identify each assessable unit within a property. All persons resident within a tenant's premises, such as wife, children, boarders, and roomers, will be recorded under one tenant number.

HOW RECORDED - a 4 digit code

CODING SYSTEM - number from 0010 to 9990, or from 0001 to 9999.

USE - mandatory

NOTE! (1) The owner of the property is always designated with a common tenant number, for example, 0000.

(2) An owner who uses part of his property as a residence and part for business purposes is assigned a tenant number for the business portion of the assessment. Similarly, a farmer with a portion of land exempted, such as a woodlot used for forestry purposes, will have a tenant number for the exempt portion.

Examples of Roll Number Coding

1. - a single residential property, situated in Ward 9, Ward Division 3, Map Subdivision 700 Parcel 46 - owner occupied.
2. - a duplex property, situated in Ward 9, Ward Division 1, Map Subdivision 41, Parcel 79, Parcel Sub-Number 01, (original parcel has been split into two parcels - owner lives in one unit.
3. - a single residential property situated in Ward 9, Ward Division 1, Map Subdivision 41, Parcel 79, Parcel Sub-Number 02 - tenant occupied.
4. - a small commercial property - an appliance store - situated in Ward 9, Ward Division 2, Map Subdivision 400, Parcel 15 - owner occupied.
5. - a light industrial property - situated in Ward 5, Ward Division 1, Map Subdivision 70, Parcel 10 - tenant occupied.
6. - a high-rise apartment building containing 180 units, situated in Ward 9, Ward Division 3, Map Subdivision 670, Parcel 23.

Table 2.2

Coded

	Cnty. Dist.	Mun.	Ward	Property No.				
				Ward Div.	Map Subdiv.	Parcel	Sub. No.	Tenant No.
1.	19	04	09	3	700	046	00	0000
2.	19	04	09	1	041	079	01	0000
	19	04	09	1	041	079	01	0001
3.	19	04	09	1	041	079	02	0000
	19	04	09	1	041	079	02	0001
4.	19	04	09	2	400	015	00	0000
	19	04	09	2	400	015	00	0001
5.	19	04	05	1	070	010	00	0000
	19	04	05	1	070	010	00	0001
6.	19	04	09	3	670	023	00	0000
	19	04	09	3	670	023	00	0001
to...	
19	19	04	09	3	670	023	00	0180

(i) (b) Assessment Roll Number (proposed system)

The purpose of the proposal is to develop a standard method of coding for the Assessment Roll Number in the Province of Ontario. For urban areas it is proposed that parcels of property be identified within Blocks (zones enclosed by streets, railway lines, watercourses or other readily identifiable topographical features, or by municipal boundaries) which in turn will be numbered within Census Tracts (CT) or Enumeration Areas (EA) as defined by Statistics Canada. For those rural areas where Statistics Canada has not coded Block numbers within CT's or EA's, it is proposed that a code based on concessions and lots (or sections and quarter-sections), as defined in the Township surveys, be used. (See part 3 in text).

The basic format of the roll number for both urban and rural municipalities is shown in Fig. 2.2

The above coding systems proposed for the Assessment Roll Number are a response to the need for a standard and flexible system of identifying properties. It is believed that the proposed system of codes is flexible enough to handle the various types of parcel groupings in the province, be they in an urban or a rural municipality. Similarly, provision has been made to allow for the numerous municipal boundary changes that have recently occurred and for those expected in the near future, especially those involving regional government.

Also incorporated into this system is the ability to code new blocks, Census Tracts, Enumeration Areas, new properties additional tenancies etc., all involved in the process of suburbanization.

Other quality features that exist with this system are:

- (i) it improves historical continuity of the property identifier by removing the frequently changed ward and poll numbers from the code.
- (ii) it provides for the retrieval both of census and assessment data for the same group of properties by using the same geographical identifiers (i.e. census tracts, enumeration areas, and blocks).
- (iii) it provides for a standardized system that would be implemented by our regional offices shortly after re-assessment.
- (iv) it allows for any gradual changeover from its political-census format to one of a grid geocode based on latitude and longitude.

Figure 2.2

(i) Urban Coding Format

CENSUS DIV.	MUN.	T	CENSUS T.R./ ENUM. AREA NO	BLOCK NUMBER	PARCEL NUMBER	PAR SUB NO.	TENANT NUMBER	TOTAL NO. OF DIGITS		
2	2	1	3	1	3	2	3	1	4	22

(ii) Rural Coding Format

CENSUS DIV.	MUN.	T	CONC./SEC. CODE	LOT/1/4 SECTION CODE	PARCEL NUMBER	PAR SUB NO.	TENANT NUMBER	TOTAL NO. OF DIGITS
2	2	1	4	5	3	1	4	22

(ii) Name and Address

(a) Name

Purpose:

1. To record names of all persons and non-persons for mailing, census and electoral purposes.
2. To provide for commentary data such as "TRADING AS _____".

Coding:

1. Names of Persons

- (a) Enter the surname followed by a comma (with no space before or after the comma) followed by all given names each separated by a comma (no spaces). Leave all unused spaces after the last given name blank. Do not enter any periods. For compound names such as "Mc Luff" enter "MC LUFF" (one space between segments).
- (b) The SEX-CODE must be "M" or "F".
- (c) Use one line only per name.
- (d) All other fields in this segment must be present except voter qualification (see later).

2. Names of Non-Persons

- (a) Enter the full name including such items as "LTD" or "CORP".
- (b) More than one line may be used.
- (c) On the first line enter SEX-CODE equal to "X" and -
 - (i) OCCUPANCY STATUS ("O" or "T" only).
 - (ii) RELIGION
 - (iii) SCHOOL-SUPPORT
- (d) On all continuation lines enter SEX-CODE equal "X" and leave all NAME STATISTICS fields blank.

- (e) Enter the most significant data on the first line
 e.g. 01 CITY OF NORTH BAY
 02 BOARD OF EDUCATION

3. Commentary Data

- (a) Enter the desired data in the name field and SEX-CODE equal "X" only. (e.g. "Trading as _____")

4. Parcels in the Name of Estates

- (a) Enter the name field as "DOE,JOHN,LUKE,ESTATE OF"
 (b) Use SEX-CODE equal "X" and other data as if a non-person
 (c) "ESTATE OF" may be abbreviated to "EST" if necessary
 (d) Use only one line per name

5. Trustees, etc.

- (a) The rightmost portion of the name field should contain one of -
 "TRUSTEE", "EXEC", "IN TRUST", "I/T" (intrust),
 "ADMIN", etc.
 (b) Treat these as name of persons.

6. Leased Properties

- (a) Long term leases where the lessee is responsible for all taxes (e.g. leased from the Federal Government or its agency)
 (i) Enter the name of the LESSOR as commentary data (enter name and sex-code equal to "X" only). After the lessor's name, enter "-OWNER".
 (ii) Follow this data by the name(s) of the LESSEE(S) on the owner roll entry as shown in the example.

<u>EXAMPLE:</u>	<u>SEQ</u>	<u>NAME</u>	<u>STATISTICS</u>
	01	SMITH,JOHN,ALAN	MTRSNC33
	02	SMITH,MARY ,ANNE	FTRSNC36
	03	GRAND RIVER CONSERVATION	X
	04	AUTHORITY-OWNER	X

(b) Address

Purpose:

To provide the ability to insert a mailing address on each roll entry.

Coding:

1. This area may include up to five lines of mailing address or "care of" lines.
2. The city, province and postal code must be on the last line of Canadian addresses OR where insufficient room, the postal code only.
3. For addresses outside of Canada, the last line contains the country and any postal code such as USA ZIP code.

Rules:

1. Canadian Postal Code

(a) Where the rightmost nine positions of the last mailing address line (city and province) are blank insert the postal code as below, otherwise put it on a new line.

(b) The postal code format is -

cc	44-45	:	blank
cc	46-48	:	first three characters
cc	49	:	blank
cc	50-52	:	last three characters

Note:

1. When the postal code becomes available in an area, it is not necessary to rekey all mailing address lines affected. A tape will be extracted from the assessment master file and sent to Ottawa for encoding. The results will be automatically applied by the computer. After this operation, each regional office must maintain the code.

(iii) Property Descriptions

A. STREET-NUMBER and NUMBER QUALIFIER

(No headings appear on the Assessment Data Sheet for these fields. If used, they will appear on the first line of the block in the upper right area of the ADS called "PROPERTY LOCATION/DESCRIPTION" and separated by the dashed lines).

Purpose:

To provide data to locate a property or portion on any given street and to provide a "qualifying address" for the list of electors.

Coding:

(1) STREET-NUMBER

- (a) Where a street name and number exists, enter the numeric portion of the street number only.
Fractions or alphabetics use the NUMBER-QUALIFIER.
- (b) Where land with no buildings (and hence no defined street number) exists, enter a number to position the property correctly on the street and put "*" in the NUMBER-QUALIFIER.
- (c) Zero is a valid number.

(2) NUMBER-QUALIFIER

- (a) "blank": The STREET-NUMBER defines the position completely.
- (b) "/": The actual street number ends in "1/2".
- (c) " - ": The street address includes a range of numbers (e.g. 132 to 142 KING STREET).

The STREET-NUMBER will be the lower of the two numbers. The APT/UNIT field will contain the higher of the two numbers.

(d) "*": The STREET-NUMBER is not available (vacant land) and a number has been inserted to position the parcel on the street. This number will be printed only on the ADS.

(e) Any letter of the alphabet can be used for street addresses of the form - "132A KING ST". If there is more than one alphabetic character use the APT/UNIT field.

B. STREET-NAME

Purpose:

To define on which street the unit is located including type and direction where applicable and to provide for property address sequenced listings.

Coding Rules:

1. Enter the actual street name without abbreviation unless there is insufficient space (18 characters maximum). Use NO punctuation. Use ONE space to separate compound names, type and/or direction codes.
2. Type of street (avenue, drive, circle, etc) has to be coded only when there is more than one street with the same name. (See list of codes following).
3. Direction of street is to be coded only when necessary (i.e. because of repeated street numbers or to assist in property location). In most instances direction is coded only when indicated on street signs.

4. Abbreviations:

(a) TYPE OF STREET

"AVE":	avenue	"LN":	lane
"BLVD":	boulevard	"LWN":	lawn
"CL":	close	"PK":	park
"CRES":	crescent	"PKWY":	parkway
"CRCL":	circle	"PL":	place
"CRCT":	circuit	"PZ":	plaza
"CRT":	court	"RD":	road
"DR":	drive	"SQ":	square
"GDN":	garden(s)	"ST":	street
"GRV":	grove	"TER":	terrace
"GT":	gate	"TR":	trail
"HILL":	hill	"WD":	wood(s)
"HTS":	heights	"XWY":	expressway
"HWY":	highway		

(b) DIRECTION OF STREET

"N":	north	"E":	east
"S":	south	"W":	west

NOTE: The overriding criterion is that all roll entries on a street have exactly the same street name, type, & direction coded.

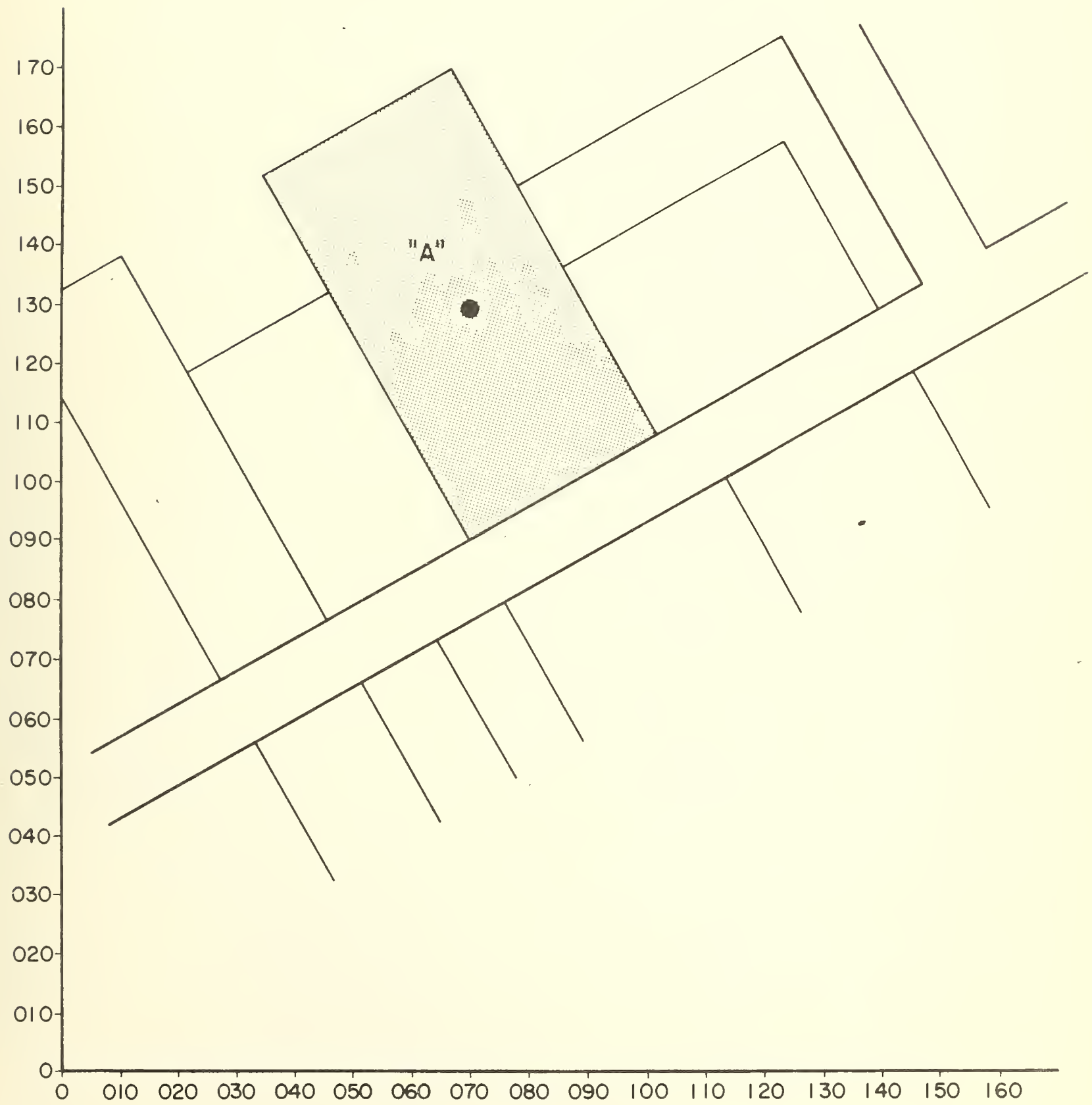
(iv) Other Geocoding Address Systems

The Assessment Division is in the process of considering other forms of indexing or address systems which would be based on a provincial co-ordinate system. Such a system would permit the exact locating of individual property parcels and permit easy calculations of the distances from a given property to schools, subways, etc. This would be a most valuable assistance to the assessor in determining the effect of location on value. When the co-ordinate system is combined with a geocode based on political units (similar to the assessment roll) it becomes an extremely flexible method of information retrieval or aggregation.

The actual method of deriving co-ordinate geocodes is described in detail in the publication Geocoding and Assessment produced by the Assessment Education Branch. Figure 2.3 provides an example of the principle involved while Figures 2.4 and 2.5 provide examples of the types of maps which computers can produce if assessment data is indexed by geocode co-ordinates.

Figure 2.3

GEOCODING—EXAMPLE OF PRINCIPLE



GEOCODE OF LOT "A" = COORDINATE OF CENTROID
= 070 130

X = FARM PARCEL GRID REFERENCE POINT

Figure 2.4

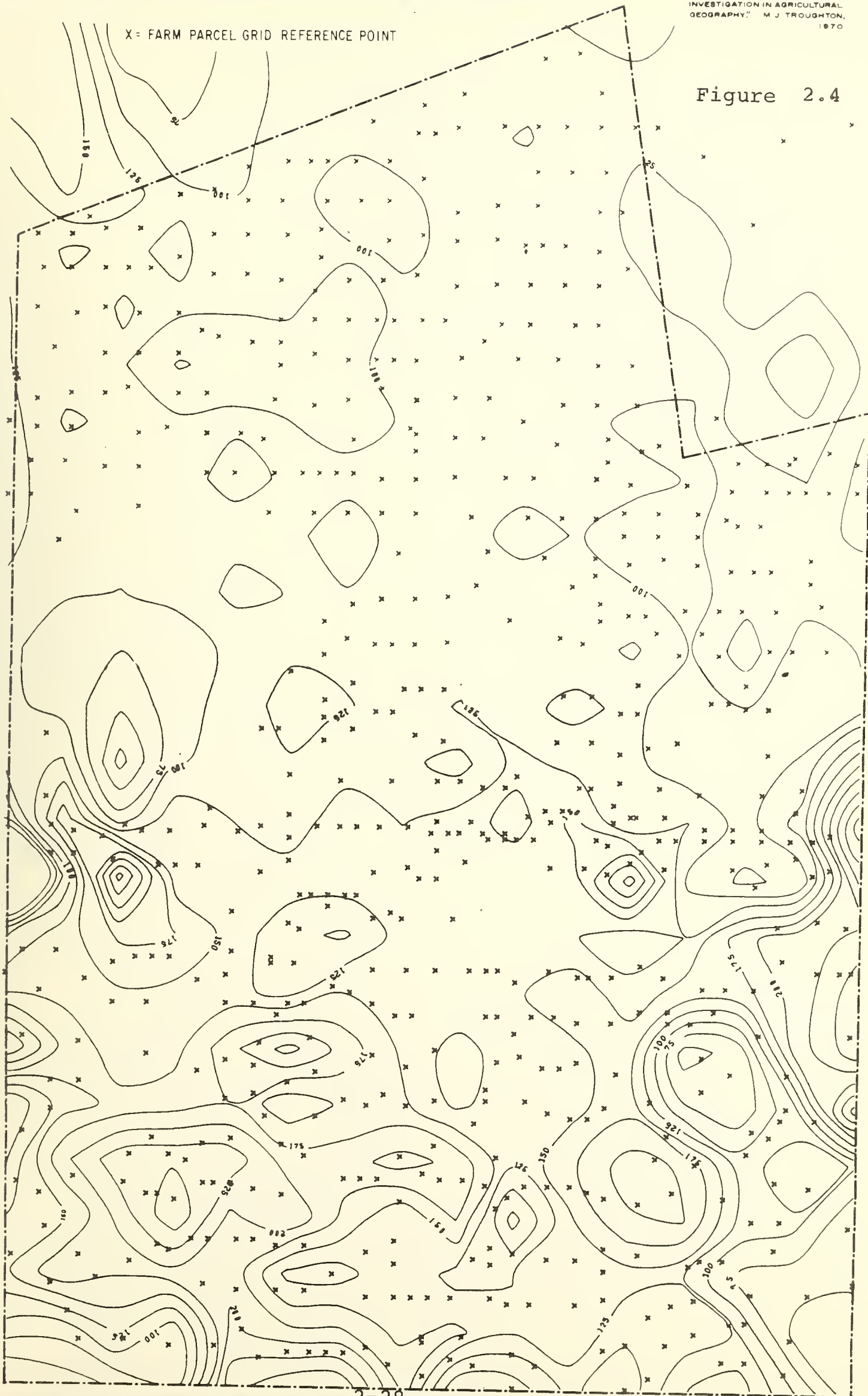
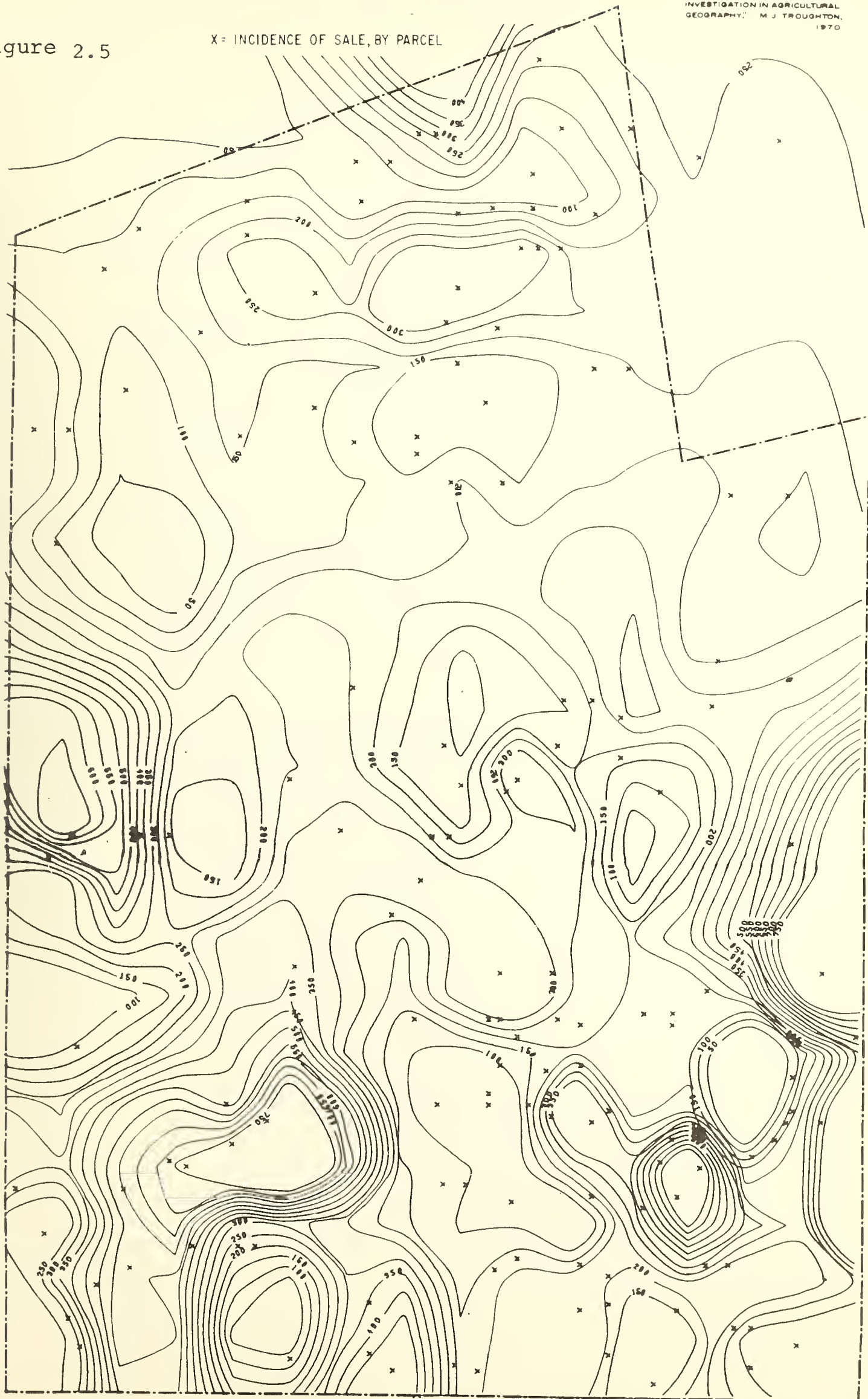


Figure 2.5

X = INCIDENCE OF SALE, BY PARCEL



III. DATA INPUT

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2) <u>Card Layouts</u>	3-2
3) <u>File Layouts</u>	3-2
4) <u>Special Files</u>	3-8
(a) Oshawa Sales Study	3-8
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5) <u>Possible Future File Arrangements</u>	3-14
(a) The Administration File	3-15
(b) The Valuation File	3-15
(1) The Property Sub-File	3-16
(2) The Sales Sub-File	3-17

III. Data Input

After assessment information has been coded the next stage involves conversion to machine readable form either in the form of punch cards or computer tape. Input for computerized analysis is the main focus of this part of the paper, but it must be remembered that a great deal of data input and processing in assessment is performed manually or with the aid of calculators. Many of the operations now being done manually could be done with computers. It is for this reason that a brief mention is made of the possibility of a C.O.R.A. file which would allow much of present manual data processing associated with the use of the Assessors Handbook of Cost Factors, to be automated.

The Standard Assessment System (interim) has altered to a large extent the input procedures and documents that are currently in use in each region. The major change has been the merging of the old statistics and master files into one multi-purpose file called the Assessment Master (AM). The tape and card layouts that follow will illustrate the contents of the present Assessment Master.

III. Data Input

(1) Punch Card.

Fig. 3.1 shows the 80 master punch card used for input into the Standard Assessment System. It may be used for fifteen different card types (05, 09, 10, 11, 12, 20, 40, 50, 51, 52, 53, 60, 65, 80 and 85).

All card types must be punched with the ROLL NUMBER in columns 1 to 19, CARD TYPE in 20 and 21, a SEQUENCE NUMBER in 22 and 23 and the ACTION CODE in column 24.

(2) Card Layouts

Figures 3.2 to 3.4 illustrates the punch card layout for each of the card types mentioned above. These correspond to the data fields shown on the Assessment Data Sheet as in Figure 3.5.

(3) File Layouts

Chapter 31, Section 03 pp 1 to 21 of the Standard Assessment System Manual describe in detail the characteristics of the various file layouts found in the system. These include both fixed and variable length records using ANS COBOL programming language.

Figure 3.1

SAMPLE PUNCH CARD

COUNTY		WARD CODE		RUL NO		SUB NC		FEMANT		CITY		CITY		CITY	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
TOTALS INCLUDING EXEMPT															
LAND		BUILDINGS		PUBLIC		RES & FARM TOTALS		SEPARATE		COMM & IND TOTALS		SEPARATE		NO OF PORTIONS	
SCHOOL AREA		PROPERTY CLASS		AREA CODES		OCCUPIED LAND		OCCUPIED BUILDINGS		BUS %		PRE-CALCULATED BUS AMOUNT		POL 12	
HI		PUB SEP						STATUS		OCCUPATION		PLACE		DATE	
NAME OF PERSON(S) ASSESSED															
MAILING ADDRESS															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ASSESSMENT APPLICATION															
STREET NO		STREET NAME OR RURAL ROUTE		PROPERTY ADDRESS		SHORT FORM		LONG FORM		PROPERTY DESCRIPTION					
FRONTAGE		DEPTH		ACRES		PROPERTY DIMENSIONS									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80



Figure 3.2

05 MUNICIPAL AREA CODES															UPPER ROLL NUMBER OF RANGE		SUP. EFF. MOIL.																																																														
ROLL NUMBER		ACT I O N		POLL #		SCHOOL AREA CODES		SPECIAL RATE AREAS																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
09 INCREASED PROPERTY VALUE																																																																															
ROLL NUMBER		ACT I O N		POLL #		SCHOOL AREA CODES		SPECIAL RATE AREAS																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
10 INCREASED PROPERTY VALUE																																																																															
ROLL NUMBER		ACT I O N		POLL #		SCHOOL AREA CODES		SPECIAL RATE AREAS																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
11 OCCUPANT CODES/VALUES																																																																															
ROLL NUMBER		ACT I O N		POLL #		SCHOOL AREA CODES		SPECIAL RATE AREAS																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
12 INCREASED IN OCCUPANT CODES/VALUES																																																																															
ROLL NUMBER		ACT I O N		POLL #		SCHOOL AREA CODES		SPECIAL RATE AREAS																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
20 NAMES																																																																															
ROLL NUMBER		ACT I O N		POLL #		SCHOOL AREA CODES		SPECIAL RATE AREAS																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80



Ontario

Figure 3.3

40 MAILING ADDRESS															MAIL LINE															POSTAL CODE															LAST LINE ONLY															SUP EFF MCH																			
ROLL NUMBER															ACTION															40															01 ↓ 05																														SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
50 PROPERTY STREET ADDRESS																																																																															
ROLL NUMBER															ACTION															50															01																														SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
51 SHORT DESCRIPTION																																																																															
ROLL NUMBER															ACTION															51															01																														SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
52 FULL DESCRIPTION																																																																															
ROLL NUMBER															ACTION															52															01															20															SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
53 PROPERTY DIMENSIONS																																																																															
ROLL NUMBER															ACTION															53															01																														SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
60 SALES																																																																															
ROLL NUMBER															ACTION															60															03																														SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
60 SALES																																																																															
ROLL NUMBER															ACTION															60															03																														SUP EFF MCH				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80



Ontario

Figure 3.4

65 RENTS										MONTHLY RENT										INCLUDED										R A T I O										SUPP. EFF. MON.																																																																															
ROLL NUMBER										ACT. U. OF										ESTIMATED										L I E A T I O N S										P O T A R K E R										SUPP. EFF. MON.																																																																					
65										00										01										02										03										04																																																																					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																								
PROPERTY PLANNING																																																																																																																							
ROLL NUMBER										80 01										PROPERTY FLA. AREA										TOTAL										PARK SP.										B A C H B O R N										S E C										A T T I C										O V E R 3										# APT. UNITS										# ROOMS										SUPP. EFF. MON.									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																								
OCCUPANT PLANNING																																																																																																																							
ROLL NUMBER										85 01										LAND USE										OCCUPIED FLOOR AREA										VEH. OCCUP.										# EMPL.										B A C H B O R N										S E C										A T T I C										O V E R 3										APT. TYPE										SUPP. EFF. MON.									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																								
ROLL ENTRY DELETE																																																																																																																							
ROLL NUMBER										99 99 D										DATE										B A T C H										OCC. OF CC										1-19										SUPP. EFF. MON.																																																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																								
BATCH CONTROL																																																																																																																							
ROLL NUMBER										00										DATE										B A T C H										AUTHORS										PCH BY										VER BY										SUPP. EFF. MON.																																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																								
Zeros																																																																																																																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																								

(4) Special Files

There are a number of special-purpose files related to the assessment function which have been included here to show the type of future file arrangements which may be increasingly important. Among these the Oshawa Sale Study file and Farm Assessment Study file are indicative of new files being utilized for research purpose in the Methodology Section of the Assessment Standards Branch. Finally there is a brief mention of a 'Computation of Residential Appraisals' file which would cut down on the manual processing which is such a major part of the present-day assessment office workload.

(a) Oshawa Sales Study

The Oshawa Sales Study is a research project carried out by the Methodology Section of the Assessment Standards Branch. The coding procedures for the study were previously outlined in Division II. Here we include three illustrations of the data format involved. Figure 3.6 is a card layout for the sales study file. Finally Figure 3.7 is a sample of the data input used in the study.

(b) Farm Assessment Study

A second example of Methodology Section research is their study on Farm Assessment. A combination of assessment, sales and soil information is used. Table 3.1 outlines the items included in each card column while Figure 3.8 illustrates the card layout for the two required punch cards.

(c) C.O.R.A.

The card layout of C.O.R.A. (Computation of Residential Appraisals) is found on Figure 3.9. This is a proposal made by I.B.M. which would use the Assessor's Handbook of Cost

Figure 3.7

SAMPLE DATA USED IN OSHAWA SINGLE-FAMILY SALES ANALYSIS																						
Sequence No.	Roll Number	Transaction		Site			Building								Location							
		Total Price	Date	Area	Frontage	Depth	Shape	Area	Rooms	Bedrooms	Bath	Stories	Design	Structure	Quality	Age	Garage	Pool	Community	Neighbourhood	Block	Dist. Town
1	0 60 12 380000000	34900.00	769	8400	70	120	1	1273	6	3	1.01.00	1	38	12	3	0	1	01	001	8300	13000	
2	0 60 12 580000000	41000.00	569	9225	75	123	1	2300	8	4	2.02.00	1	37	9	5	0	1	01	001	8300	13000	
3	0 60 11203000000	31000.00	669	6976	64	109	1	1406	6	3	1.51.00	2	36	8	3	0	1	01	001	9000	14000	
4	0 60 11155000000	31000.00	769	6300	60	105	1	1324	6	3	1.52.00	2	36	1	3	0	1	01	001	9000	14000	
5	0 60 11182000000	45900.00	769	6800	68	100	1	2053	7	4	2.02.00	2	38	6	5	0	1	01	001	9000	14000	
6	0 60 11105000000	26000.00	669	6300	60	105	1	1087	5	3	1.01.00	1	35	11	1	0	1	01	001	9000	14000	
7	0 60 12 360000000	32000.00	869	9840	82	120	1	1638	6	3	1.01.00	2	48	15	6	0	1	01	001	8300	13000	
8	0 60 12 950000000	35500.00	769	6324	62	102	1	1349	5	3	2.01.00	2	37	9	3	0	1	01	001	8300	13000	
9	0 60 12110000000	29000.00	869	7040	64	110	1	1254	6	3	1.01.00	1	35	11	3	0	1	01	001	8300	13000	
10	0 60 11105000000	26000.00	669	6300	60	105	1	1087	5	3	1.01.00	1	35	11	1	0	1	01	001	9000	14000	
11	0 60 12185000000	27000.00	769	6210	54	115	1	1199	5	3	1.01.00	1	35	11	2	0	1	01	001	8300	13000	
12	0 60 11173000000	35000.00	969	6300	63	100	1	1723	5	3	1.52.00	2	37	2	3	0	1	01	001	9000	14000	
13	0 60 11177000000	40500.00	869	6500	65	100	1	1905	7	4	1.52.00	2	37	3	5	0	1	01	001	9000	14000	
14	0 60 11163000000	35800.00	869	6100	61	100	1	1723	6	3	1.52.00	2	37	1	5	0	1	01	001	9000	14000	
15	0 60 11167000000	43000.00	969	6000	60	100	1	2318	8	4	2.52.00	1	37	1	5	0	1	01	001	9000	14000	
16	0 60 11160000000	31000.00	969	6300	60	105	1	1319	6	3	1.52.00	2	36	1	3	0	1	01	001	9000	14000	
17	0 60 11175000000	40000.00	1069	6300	63	100	1	1970	6	3	2.02.00	2	37	3	5	0	1	01	001	9000	14000	
18	0 60 12 420000000	37000.00	969	7820	68	115	1	1797	7	4	2.01.00	2	38	14	5	0	1	01	001	8300	13000	
19	0 60 11 420000000	29900.00	1069	6222	61	102	1	1342	5	3	1.01.00	1	35	6	3	0	1	01	001	9000	14000	
20	0 60 11157000000	36000.00	1269	6300	60	105	1	1944	8	4	2.02.00	2	37	1	3	0	1	01	001	9000	14000	
21	0 60 5 420000000	25000.00	769	5550	50	111	1	1056	5	3	1.01.00	1	35	2	2	0	2	03	003	14200	20400	
22	0 60 17 910100000	21300.00	769	4332	38	114	1	1056	5	3	1.01.00	1	35	1	1	0	2	04	005	12200	18400	
23	0 60 41320200000	21900.00	669	3570	30	119	1	1233	6	4	1.52.00	3	35	1	1	0	2	03	003	14200	20200	
24	0 60 5 790200000	23100.00	369	5040	45	112	1	1229	5	3	1.01.00	1	35	1	1	0	2	03	003	14200	20400	
25	0 60 5 410300000	22810.00	869	5290	46	115	1	1097	5	3	1.01.00	1	35	1	2	0	2	03	003	14200	20400	

Table 3.1

FARM ASSESSMENT STUDY, PART ONE: CARD LAYOUT

Card One

<u>Item</u>		<u>Columns</u>
Roll Number		1 - 19
Total Acres		20 - 23
Total Assessment	-Assessment Data	24 - 30
Land Assessment		31 - 37
Total Building Assessment		38 - 44
Out-Building		45 - 51
Date of Sale	-Sales Data	52 - 55
Sale Price		56 - 62
Plot No.	-Soil Data 1	63
Grade (if pointed in Office)		64
Points		65 - 67
Acres		68 - 71
Card Number		80

Card Two

Roll Number	1 - 19
Soil Data 2	20 - 28
Soil Data 3	29 - 37
Soil Data 4	38 - 46
Soil Data 5	47 - 55
Soil Data 6	56 - 64
Card Number	80

[illegible]

INPUT DATA SHEET

Figure 3.9

COUNTY AND MUNIC. NO.	ASSE- SOR NO.	ROLL NUMBER				
CITY MUN		WD	DV	POLL	ROLL	SUB

COMPLETED BY _____
DATE _____
ASSESSOR _____

COUNTY _____

MUNICIPALITY _____

PROPERTY ADDRESS _____

31

[illegible][illegible][illegible][illegible]

Factors as a basis. The First card would contain only the Roll number; the Second card data on first storey and heating; the Third card would include information on the second storey; the Fourth card data on recreation rooms (or finished basement), unfinished basements, and garages; and the Fifth card data on additives and allowances.

(5) Possible Future File Arrangements

This note sets out a general framework for an assessment data system in Ontario. Briefly, it suggests a future course for information development in order to provide general criteria for current policy decisions.

The proposal represents suggestions for discussion rather than detailed recommendations. For the most part it involves concrete assumptions stated without elaborate supporting argument. In addition, some generally recognized virtues of an assessment data system have been taken for granted. These include enough flexibility to accommodate changes associated with land subdivision and assembly, and complete standardization of definitions and recording procedures.

Objectives and Major Assumptions

The proposal suggests a complete, province-wide information system designed to serve all data needs of the present Assessment Division. This system would be centralized both in terms of facilities and for purposes of administration. It would also be constructed to take maximum advantage of modern information technology.

Central to the proposal is the assumption that the information requirements of the Division fall into two broad classes: (1) Administration, and (2) Valuation. Since needs in these two areas differ in important respects we suggest the creation of separate general files in each case. The Administration File would include all information most usefully collected on the basis of assessable units.*

* See present Data Collection Manual, iii.

The Valuation File would include all information most usefully collected on the basis of properties.*

(a) The Administration File

The Administration File would be developed on the basis of the current Assmt Data Sheet. This might involve the addition of some data, and the exclusion of other data that relates more to properties than to assessable units. Examples of data that should be excluded are total floor area, effective age, and all information dealing with sales.

Prime responsibility for the development of the Administration File would rest with the Services Section of the Standards Branch in company with Assessment Service staff in the field. In most cases information in the Administration File would likely be collected by part-time enumerators. Part of this information would include administrative data for strictly assessment purposes, and part would include additional information that assessment offices are required to collect under existing legislation or policy arrangements.

(b) The Valuation File

Almost all information in the Valuation File would be collected by working assessors. At the very least it would invariably require review or editing by trained assessment staff. In some cases the file might relate to legal requirements involving matters like public information disclosure. We suggest, however, that this would only relate to distribution of information, and would not constrain the actual collection of data.

For purposes of discussion the Valuation File can be divided into two sub-files: (1) Property, and (2) Sales. The Property Sub-File would include all necessary physical data on every property. The Sales Sub-File would include only transaction or sales data for properties that have recently sold. Eventually it might be appropriate to

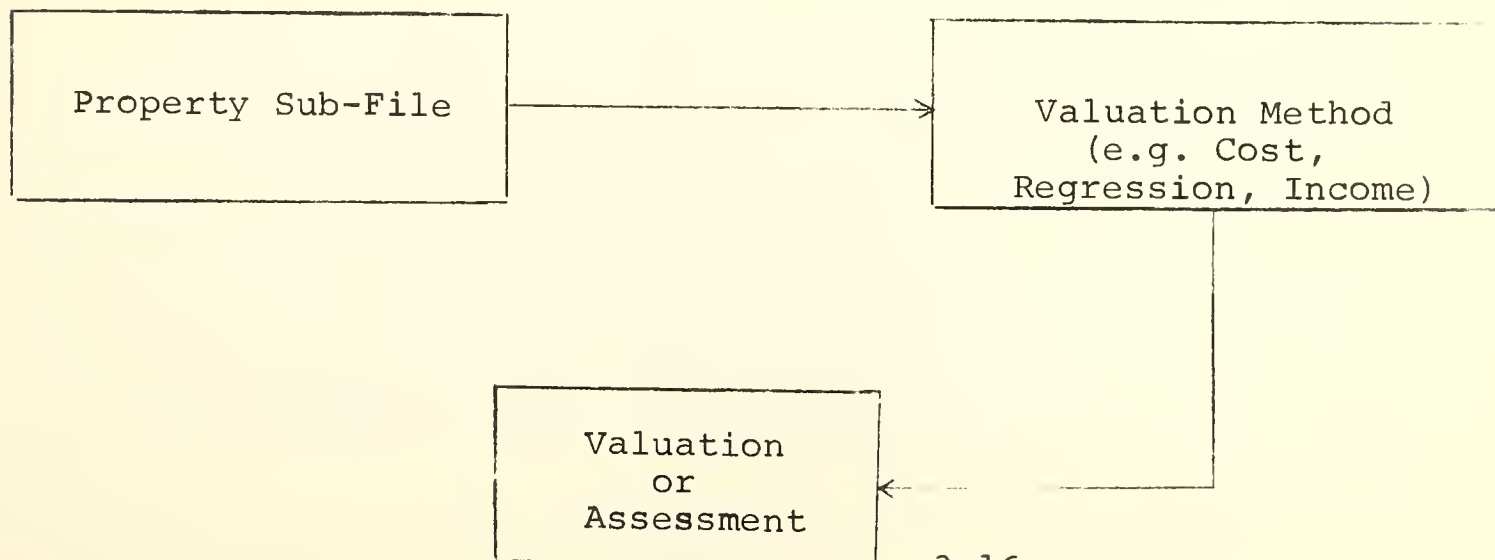
* A property is a unit of real estate that can be bought or sold.

integrate these two sub-files into a single, general valuation file. Yet it seems clear that during some interim period the sales and property sub-files will remain practically separate. In this context experience gained in the interim period might suggest that there are good administrative reasons for keeping the sales and property sub-files separate.

(1) The Property Sub-File

The Property Sub-File would be developed on the basis of the current set of Division Appraisal Cards. As with the Appraisal Cards the sub-file would be further subdivided on the basis of general property use, to the extent that information requirements vary according to use. For example, we might have a single-family sub-file, a multi-family sub-file, a farm sub-file, and so forth. These subdivisions, however, would not relate to different valuation approaches (market, cost, income).

Information on the Property Sub-File would include raw data and basic classifications, but not actual computations. For example, floor area (raw data) and quality of construction (classification) would be included, but not replacement cost new less depreciation (computation). Valuation systems, in other words, would be kept separate from information systems, and particular computations or valuations would be treated as output from the two types of systems working together. This is very roughly illustrated in Figure 1. In a similar context raw data would be kept in a distinct and separate part of the Property Sub-File from classifications of data.

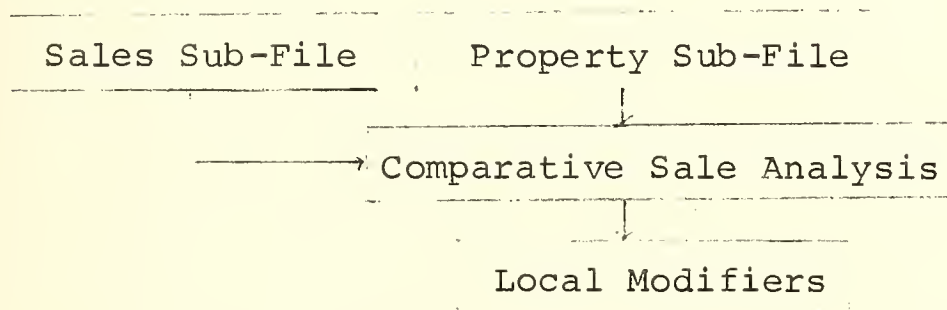


(2) The Sales Sub-File

Ideally the Sales Sub-File would include only information on the details associated with property transactions (date of sale, sale price, financing, "validity"). It would not include any information on property characteristics (e.g. floor area, site frontage, building age), or administrative details (e.g. assessment, tax class, school support).

In almost all cases when sales information is used it will be merged with data from other files. For example, using sales information to compute local modifiers would involve merging data on recent sales with data from the Property Sub-File, as seen below. To facilitate this type of merging all files would be identified by some common device like the present roll number.

In the short run this type of sales file might not be practical because of immediate needs that require the collection of sales and other data together. Ultimately however, collecting sales and other data together will only duplicate property and administrative data collected in other files.



Conclusion

As noted earlier the proposal set out here represents suggestions for discussion rather than detailed recommendations. It has been written in the belief that some general framework for an information system is necessary, to ensure that decisions about matters of detail contribute to the development of a useful and workable assessment data program. The key suggestion behind the proposal is that before we can reasonably decide whether a particular item of information

should be collected we must decide on the objectives and character of the data system as a whole.

IV. DATA PROCESSING

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IV. Data Processing

Data Processing is the term most people use when they refer to the use of computers (i.e. E.D.P. or A.D.P.). The foregoing parts of this paper have tried to demonstrate how a considerable degree of preparation involving collection, coding and conversion into input form is necessary before data processing per se can take place.

Since this is not intended as a manual to teach data processing the technical aspects of computer programming are mentioned only in passing.

(1) Update Programmes

(a) Assessment Master

During the course of the assessment year, the Assessment Master is updated and a new printout of ADS is produced. This may occur three times during the period from January to December.

Figure 4.1 illustrates by means of a flowchart how a new Assessment Master is created. Basically, the information that is altered (EDIT DETAILS) includes changes to ADS regarding new owners, new values, sales data and other information. The Municipal Enumeration Notice is also used to record changes but only alters "people" information (names, mailing addresses, school support and other personal data).

The other information that is added (SORT DETAILS) arises from new properties being created or additions to existing properties. This also includes the merging of the Supplementary Master Tape (see 1(b)).

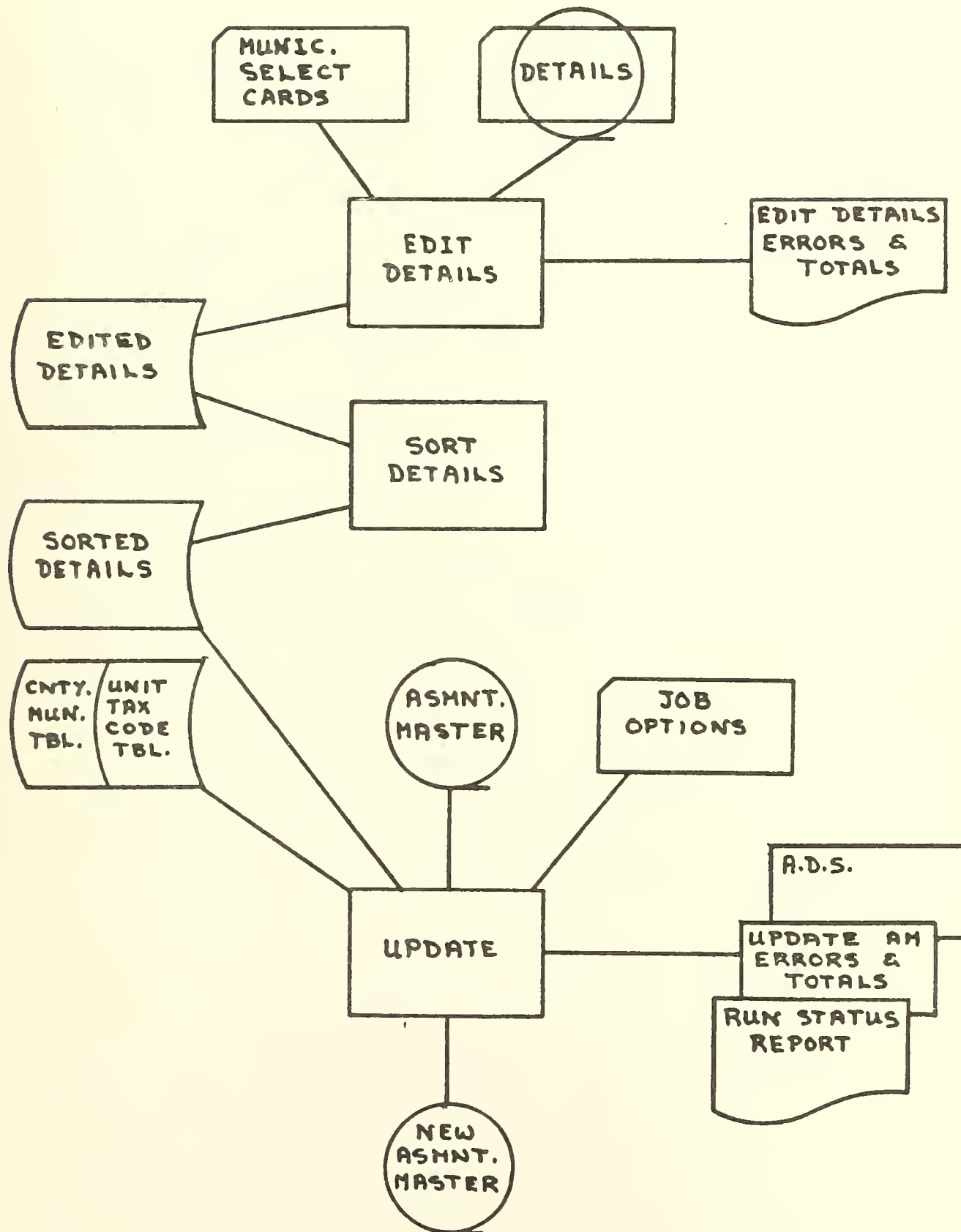
Finally, from the old Assessment Master a new tape is produced as well as a new printout of ADS forms. This new Assessment Master is also manually updated from error listings that are produced as part of the run.

(b) Supplementary Master

Throughout the assessment year, the value of properties is increased by the addition or expansion of buildings and new businesses are erected. These increases in assessment are called supplementals and are incorporate by building a small master file and printing rolls and notices. Only the increase in value is reported and this increase may be taxable for part of the current

FIGURE 4.1

UPDATING THE ASSESSMENT MASTER



year and will be taxed for future years. The increases are consolidated into the main master file prior to the roll close/enumeration period and year-end. (See Fig. 4.2) All decreases in value due to demolition or business collapses must be processed by the courts.

(2) Report Programs

(a) Statutory Assessment Forms

The Standard Assessment System is presently capable of producing four statutory reports by means of accessing the Assessment Master.

(i) Assessment Notices

Figure 4.3 demonstrates how assessment notices (both regular and supplemental) are produced from the Master. The actual printout may include notices for all properties and business tenants on the tape or just for those properties where a change of value has occurred.

(ii) Assessment Rolls

Beside the regular Assessment Rolls that are printed for each municipality, Figure 4.4 also flowcharts the computer program to produce the Special Roll Index.

(iii) Voters Lists

As indicated in Chapter I, the Municipal Voters Lists is only generated for those municipalities holding elections. Fig 4.5 show the procedure for producing the Voters List as well as other reports which are used to verify the electoral information on the list.

(iv) Year-End Analysis

Municipalities require by legislation that certain statistical reports be supplied to them. This includes a "Population Analysis" (Assessors Return) which records the total population within each municipality and is used to allocate provincial grants and other benefits. Also in Figure 4.6, municipalities require a report which shows those properties subject to a special education tax as outlined in the Public and Separate Schools Acts.

FIGURE 4.2

UPDATING THE SUPPLEMENTAL MASTER

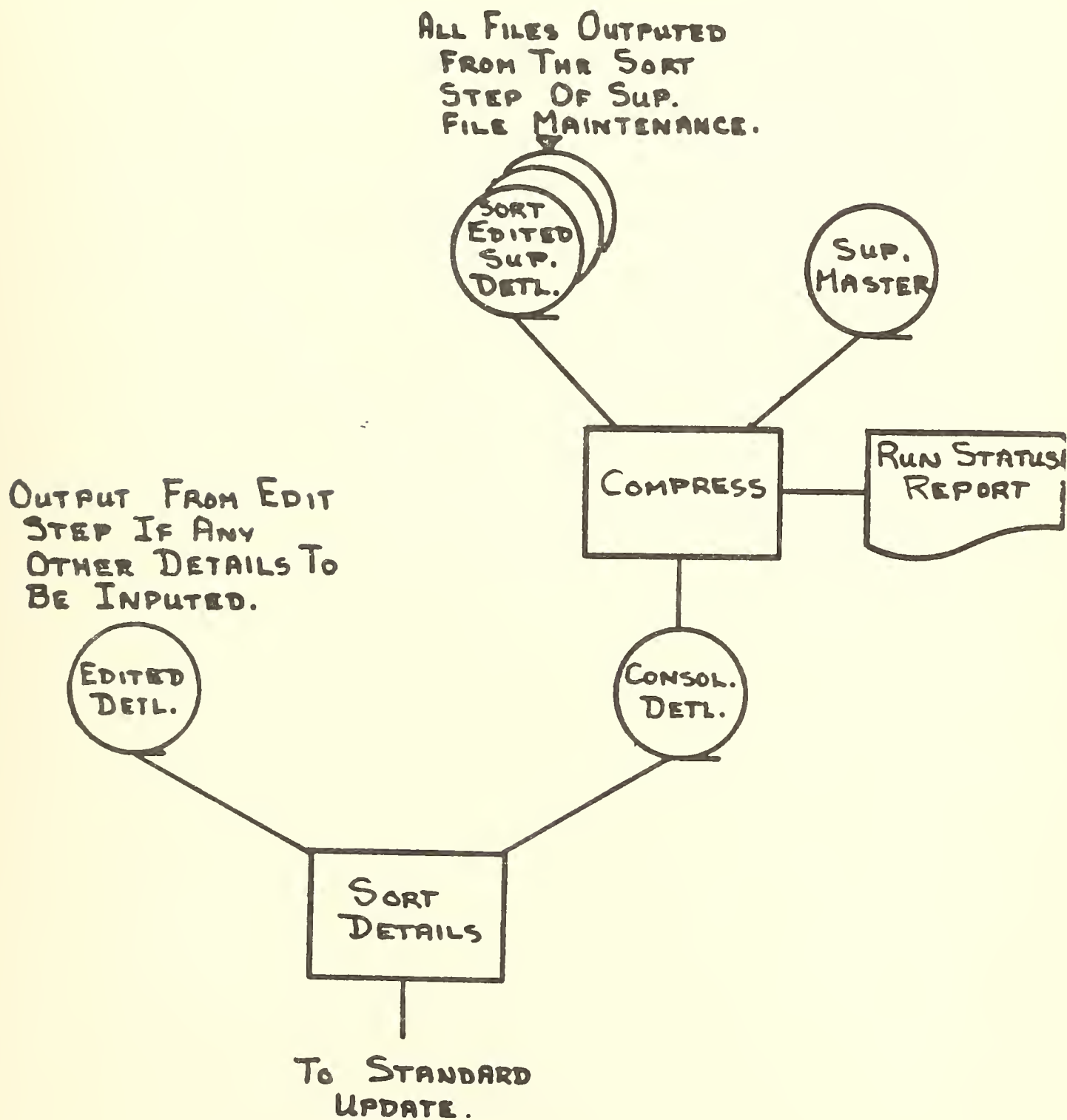


FIGURE 4.3

PRINTING THE ASSESSMENT NOTICES

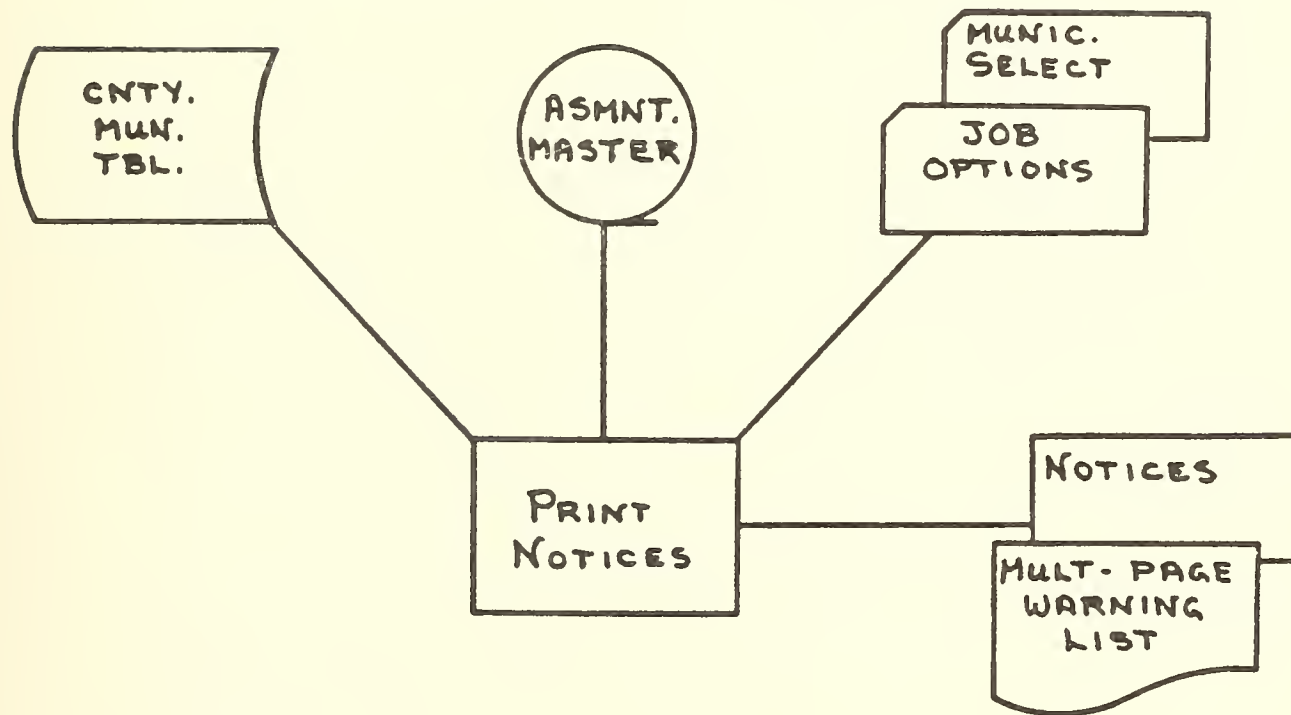


FIGURE 4.4

PRINTING THE ASSESSMENT ROLLS

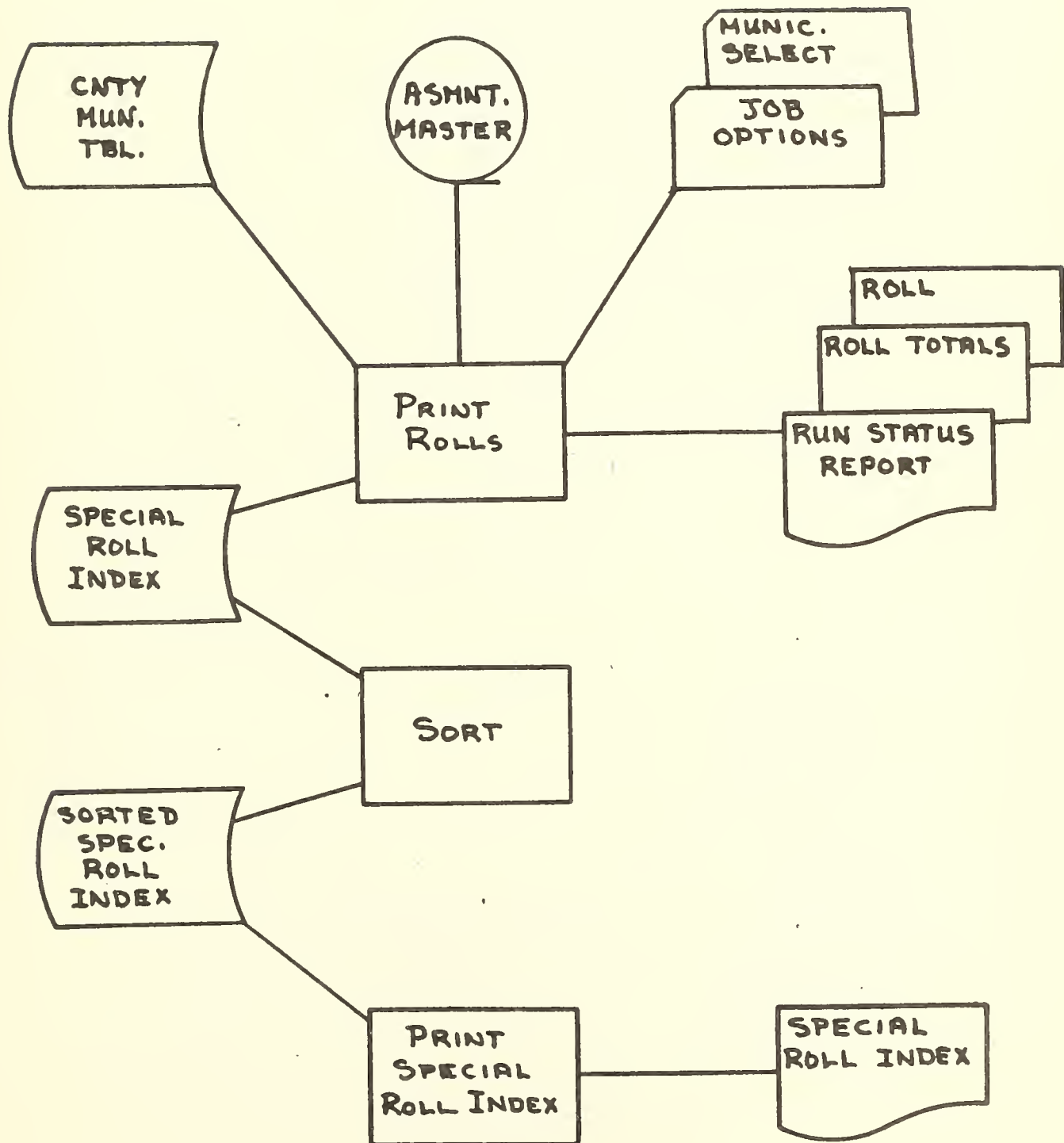


FIGURE 4.5

PRINTING THE VOTERS LIST

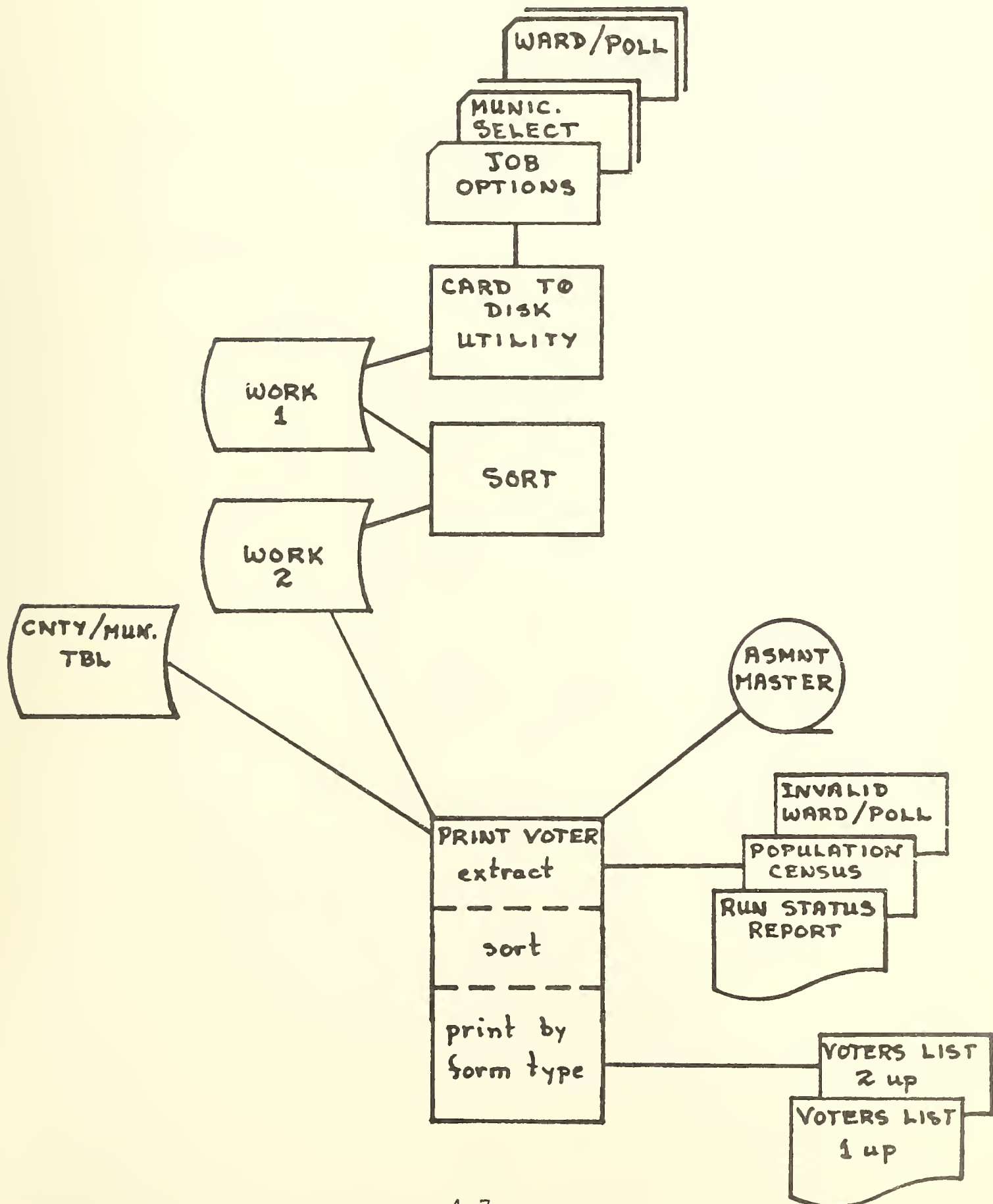
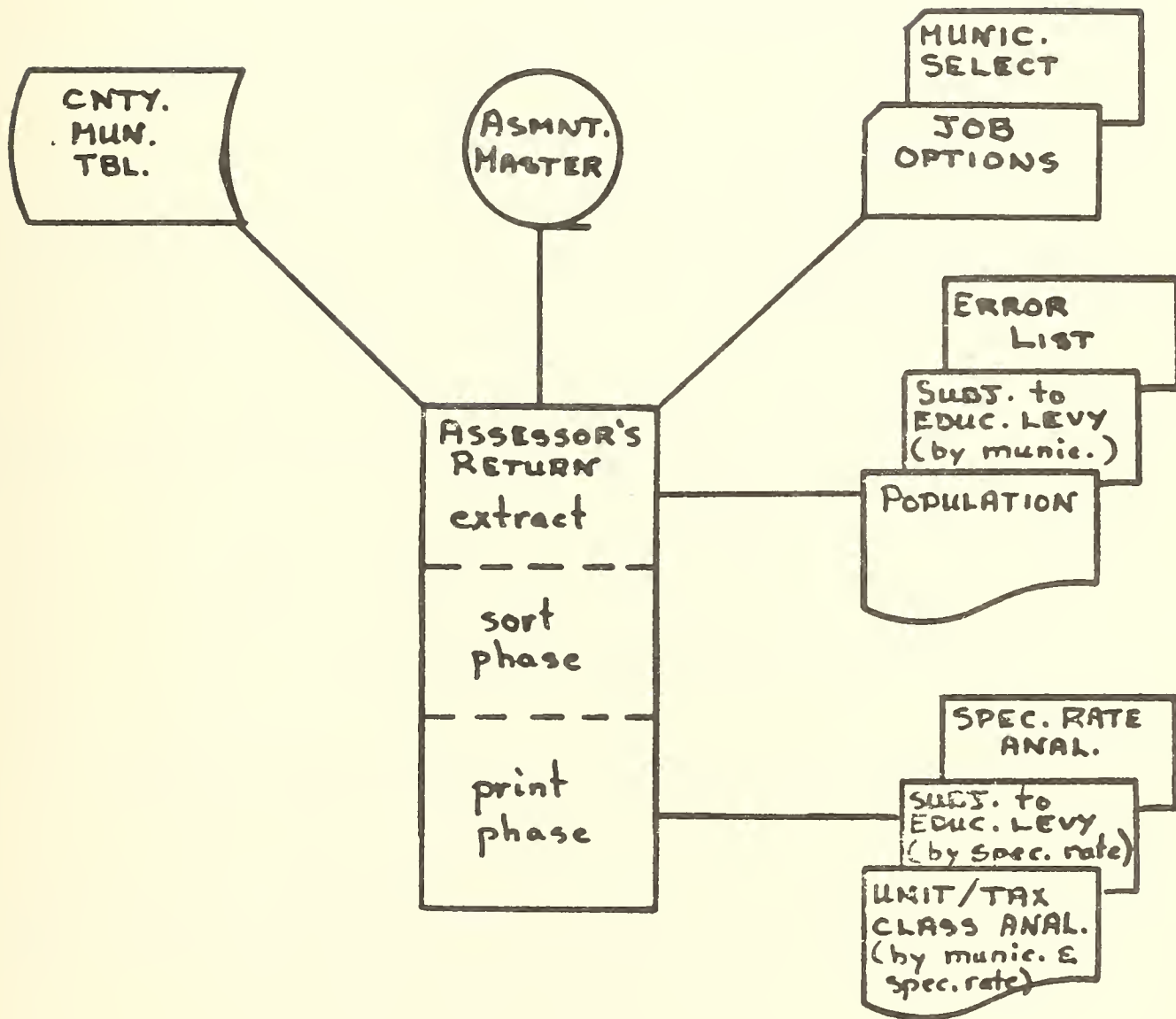


FIGURE 4.6

PRINTING THE YEAR-END ANALYSIS



(b) Other Programmes

(i) Municipal Enumeration Notices (MEN)

Prior to conducting the Fall Enumeration, a new printout of MEN Forms is required such that enumerators can go out into the field and update the "people" information on the Assessment Master. Figure 4.7 illustrates this procedure.

(ii) Appraisal Cards

When new properties or businesses are added to the Assessment Master, Figure 4.8 flowcharts the simple program used to generate new appraisal cards for these entries.

(iii) Alpha Indexes

At certain intervals throughout the year, special lists are provided which facilitate the manual searching of property information. These are the Alpha Street Listing and the Alpha Names Lists which appear as the output reports of Flowchart 4.9 (SORTED INDICES).

The system contains other programs which are not graphically illustrated here but should be mentioned:

- (a) a program to reproduce the Master tape
- (b) a program to print address labels
- (c) a series of programs to renumber roll entries when roll numbers have been changed.

(3) Statistical Analysis Routines for Market Sales Studies

The statistical analysis routines used for market sales studies may be classed as multivariate techniques. The three types used thus far are Factor Analysis, Multiple Regression

FIGURE 4.7

PRINTING THE MUNICIPAL ENUMERATION NOTICES

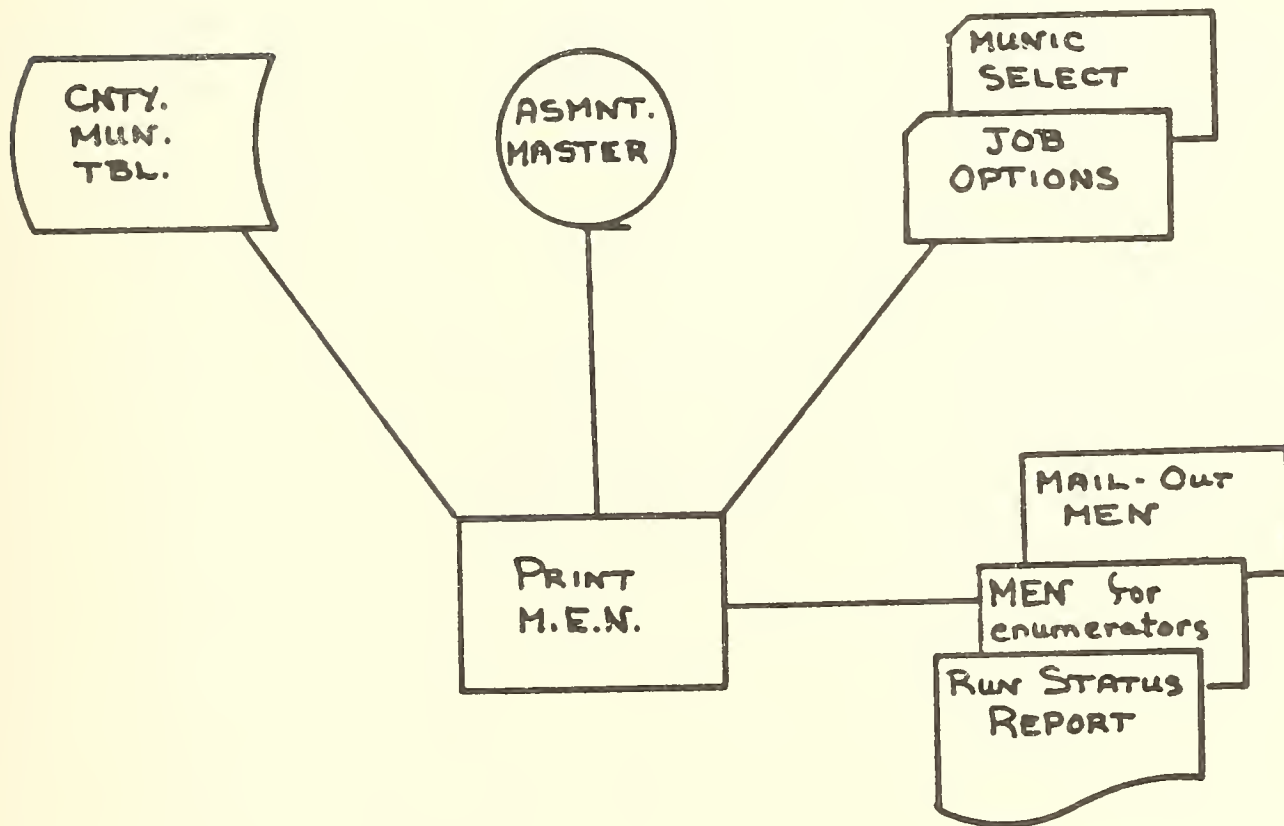


FIGURE 4.8

PRINTING THE APPRAISAL CARDS

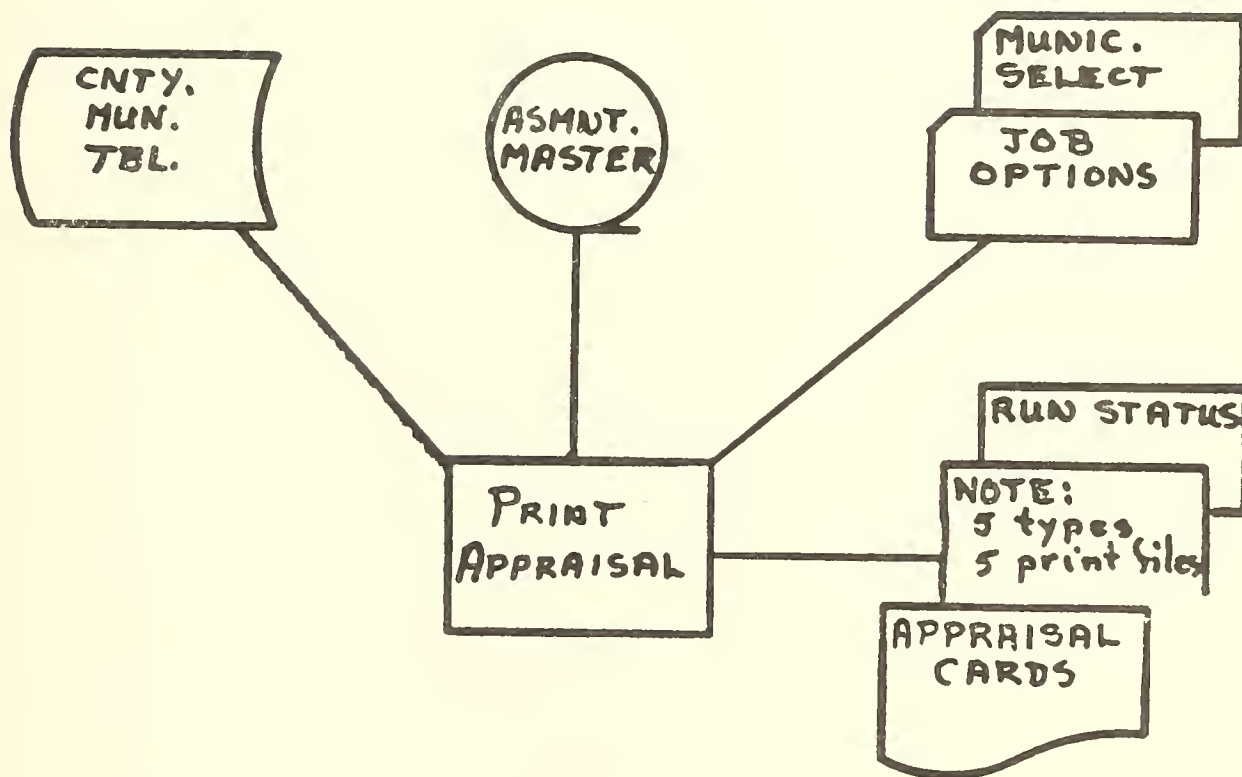
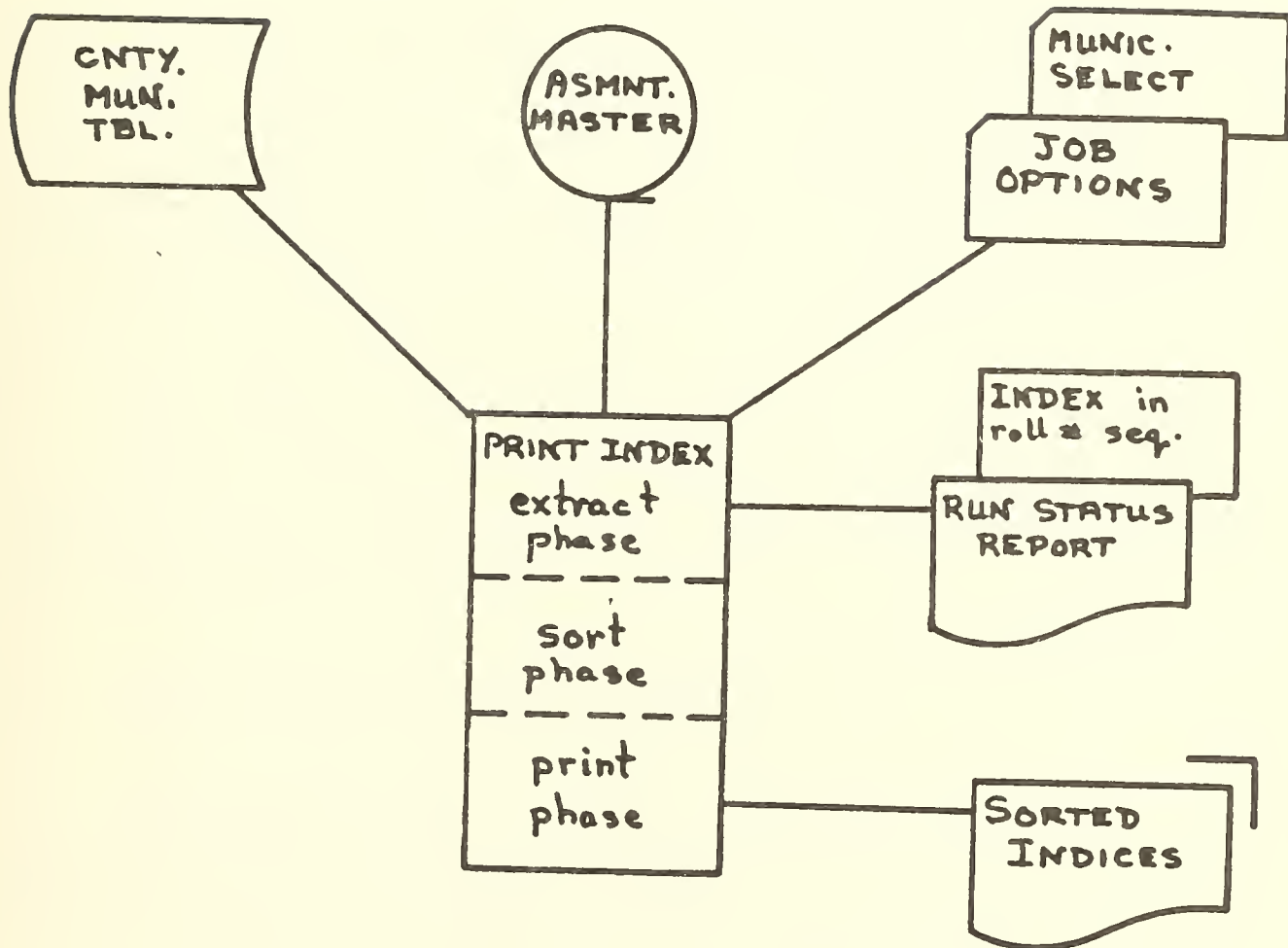


FIGURE 4.9

PRINTING THE ALPHA LISTS



and A.I.D. (Automatic Interaction Detection) also known as Grouping Analysis. It is not the intention of this paper to discuss these statistical techniques except to say that the three are part of package or 'canned' programmes available through most computer firms. What is of greatest importance is the way in which the multivariate techniques have been made to complement one another.

(a) Initial Analysis and Stratification

In this stage single family housing is divided into groups by the A.I.D. programme. Meanwhile Factor Analysis and Multiple Regression are used to first isolate most significant variables and secondly define interrelationships among variables affecting market values. The result is a stratification of the housing market into different groups. (See Figure 4.9).

(b) Iterative Analysis of Strata

Figure 4.10 presents a flow chart of the process whereby market value predictive models are developed for individual housing groups.

(4) Income Analysis for Valuation

Figure 4.11 outlines a flowchart model of the income capitalization method of valuation. This uses the data collected on the Income Appraisal Card (Figure 1.8). A similar income appraisal method has been computerized by W. M. Shenkel in "The Income Approach by Computer Analysis", 35th Annual Property Assessment Administration Conference, 1970. At present the Methodology Section is engaged in an analysis of income-earning residential properties which should result in the adoption of more refined methods of income analysis.

FIGURE 4.10

STATISTICAL ANALYSIS OF RESIDENTIAL SALES

III. STATISTICAL ANALYSIS AND PREDICTIVE MODELS

(1) Initial Analysis and Stratification

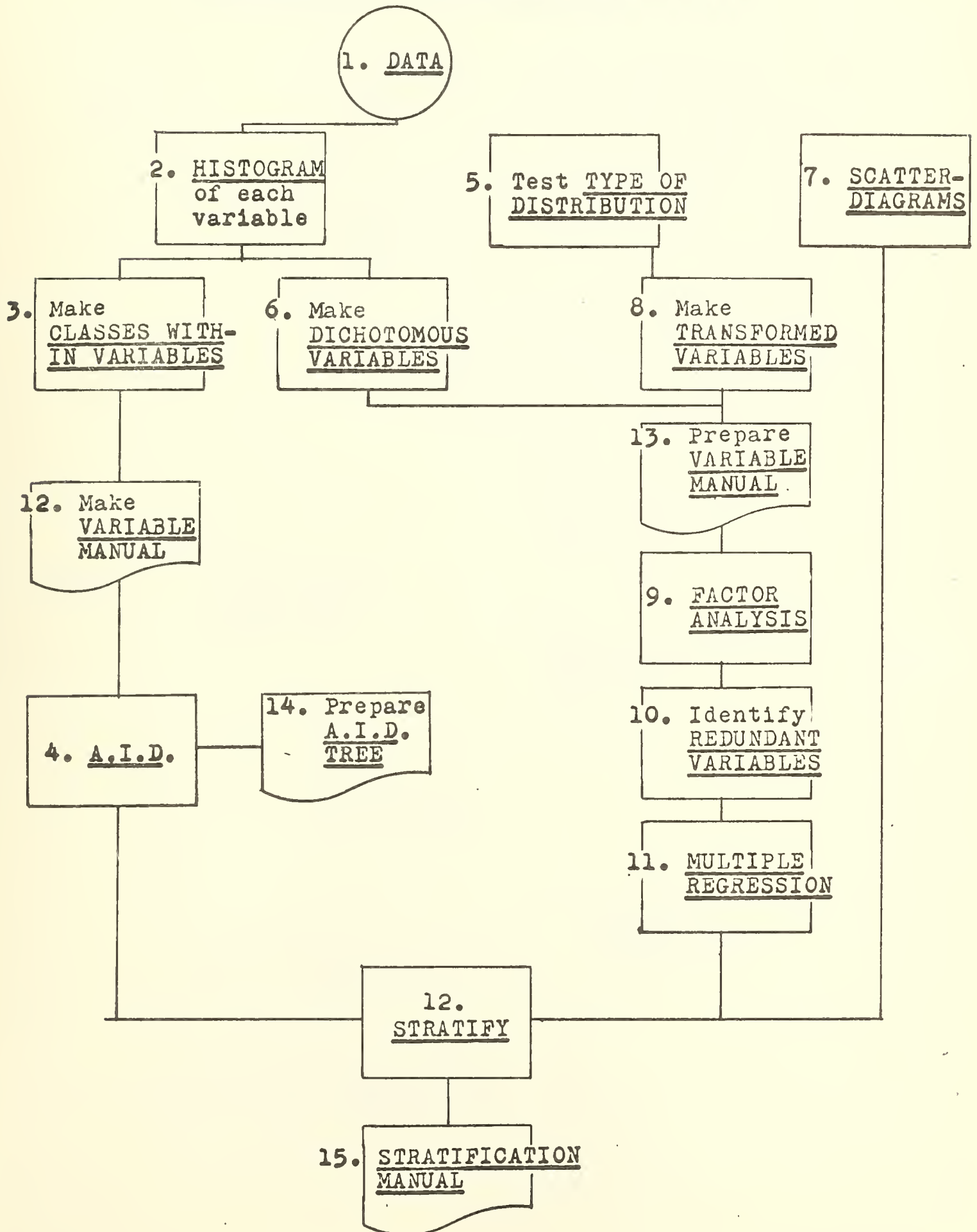
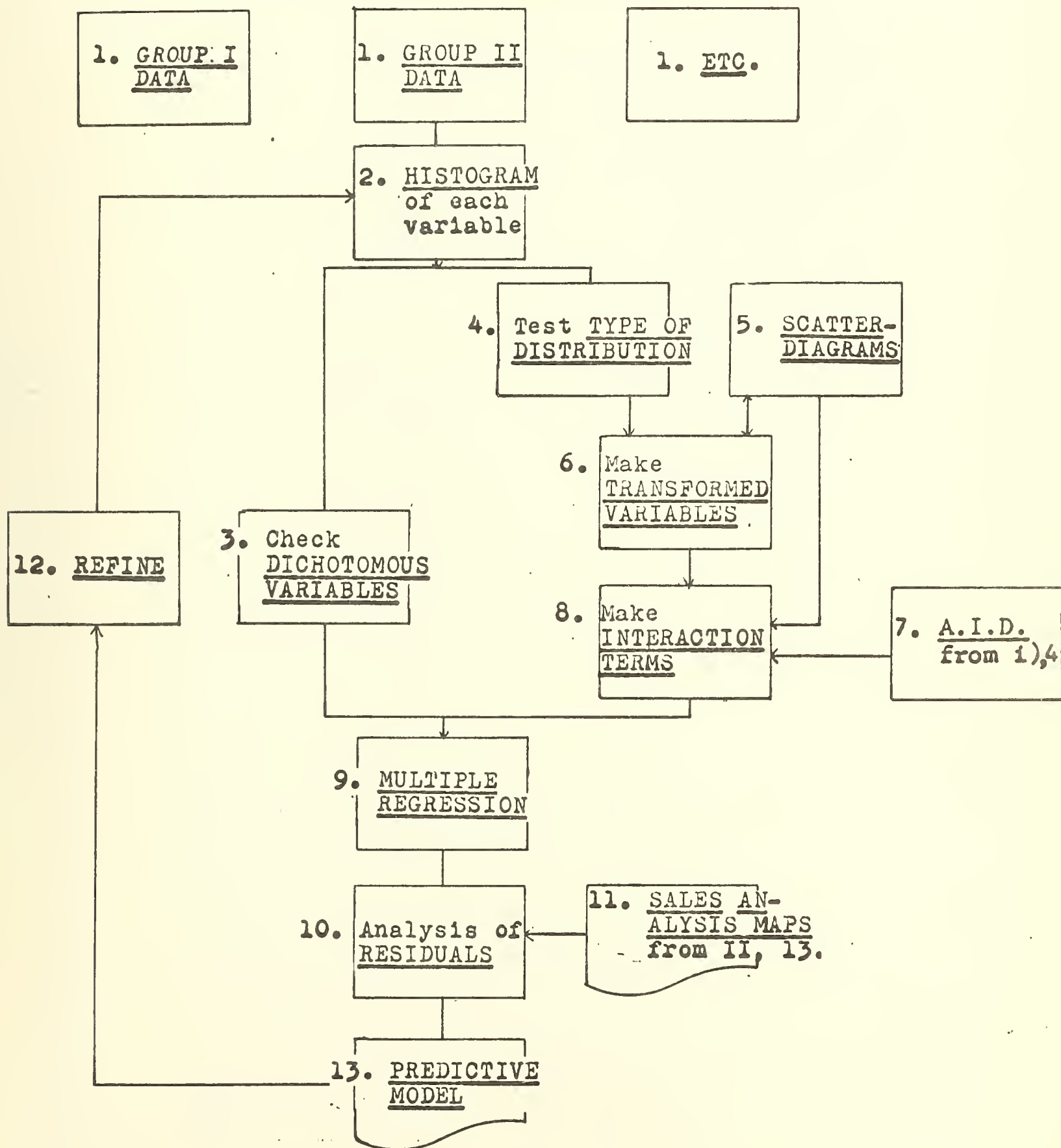


FIGURE 4.1¹

STATISTICAL ANALYSIS OF RESIDENTIAL SALES

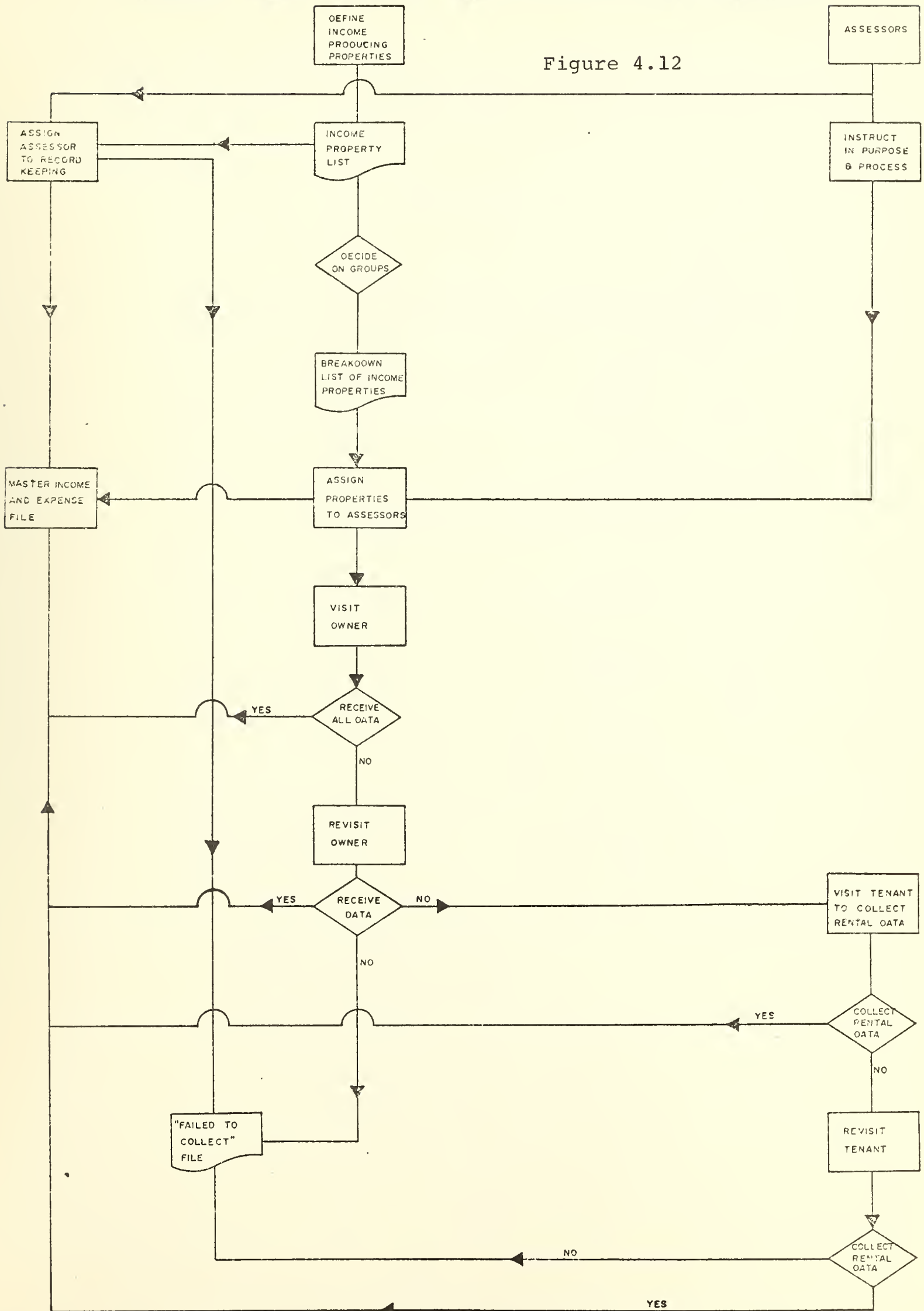
III. STATISTICAL ANALYSIS AND PREDICTIVE MODELS

(11) Iterative Analysis of Strata



INCOME AND EXPENSE DATA COLLECTION PROCESS

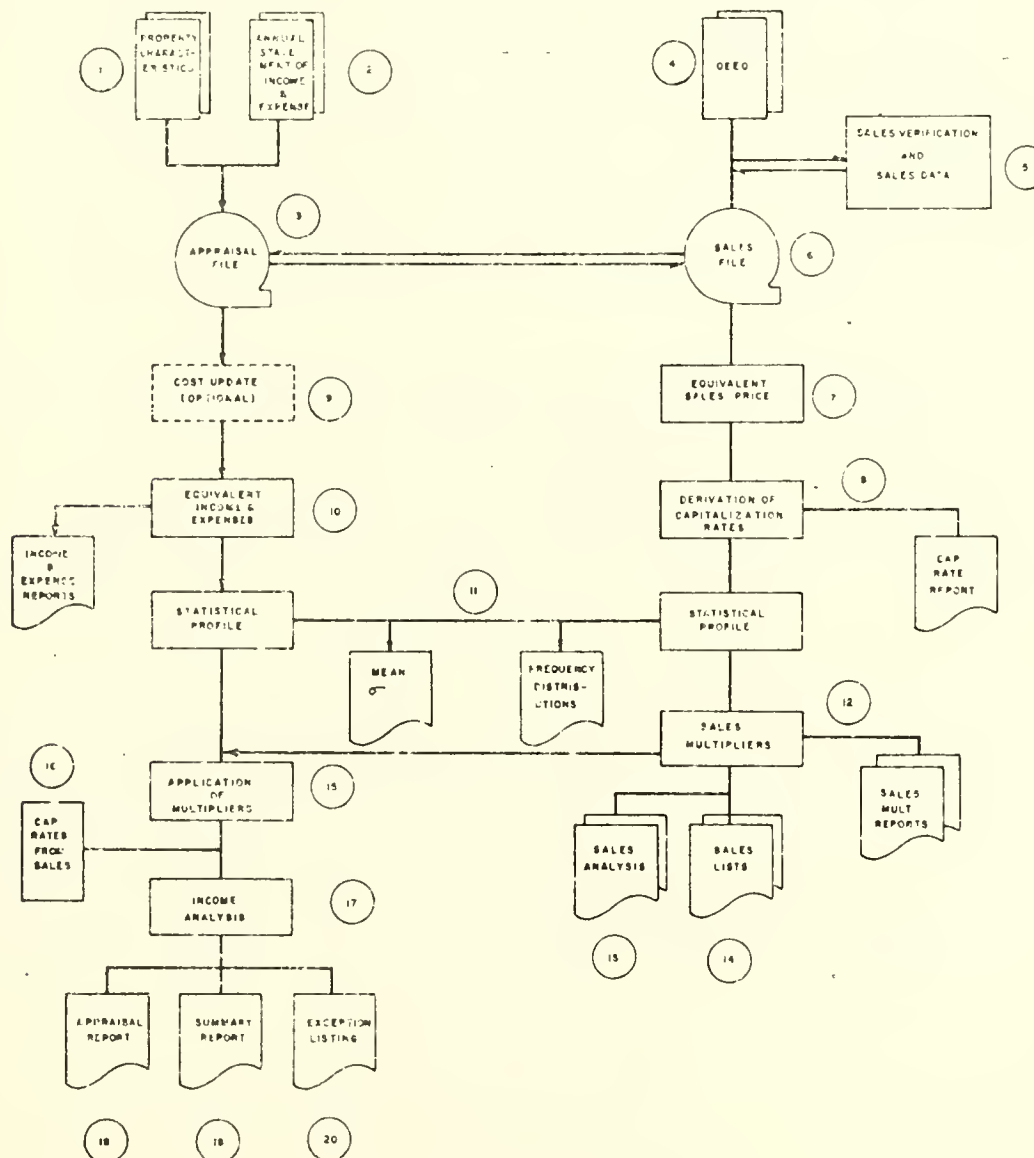
Figure 4.12



Whether their findings will be translated into a system such as that suggested by R.H. Gustafson in his General Systems Layout for Multiple Family Residences (see Figure 4.13) remains to be seen.

Figure 4.13

Application GENERAL SYSTEM LAYOUT - MULTIPLE FAMILY Date 3/2/70 Page 1 of 1
 Procedure _____ Drawn By Robert H. Gustafson



5. Condominium Valuation Procedure

(i) Sales Analysis

Once the data has been collected as outlines in Chapter I and this same data has been coded using the form indicated in Chapter II, the computer enters the picture and manipulates the sales data into a set of totals, ranges, averages etc. as indicated on the flowchart of Figure 4.14

(ii) Valuation Procedure

These calculations provide the basis of two alternative methods of valuation:

- (a) Figure 4.15 describes the manner in which a final estimate of value is arrived at using the figures at hand and performing a so called "mental regression". This requires that the assessor conduct a comparative sales analysis and also examine certain influencing factors of value.
- (b) The second alternative requires a computer application of various multiple regression techniques to compute certain statistical relationships in which a trained assessor can examine and provide an accurate estimate of value. (Figure 4.16)

In actual field tests, both the above methods resulted in good approximations of values with consistent results. However, the key to success in any valuation technique of this character is an accurate and well-documented sales file of which the proponents of this new type of assessment attempted to perfect.

Figure 4.14

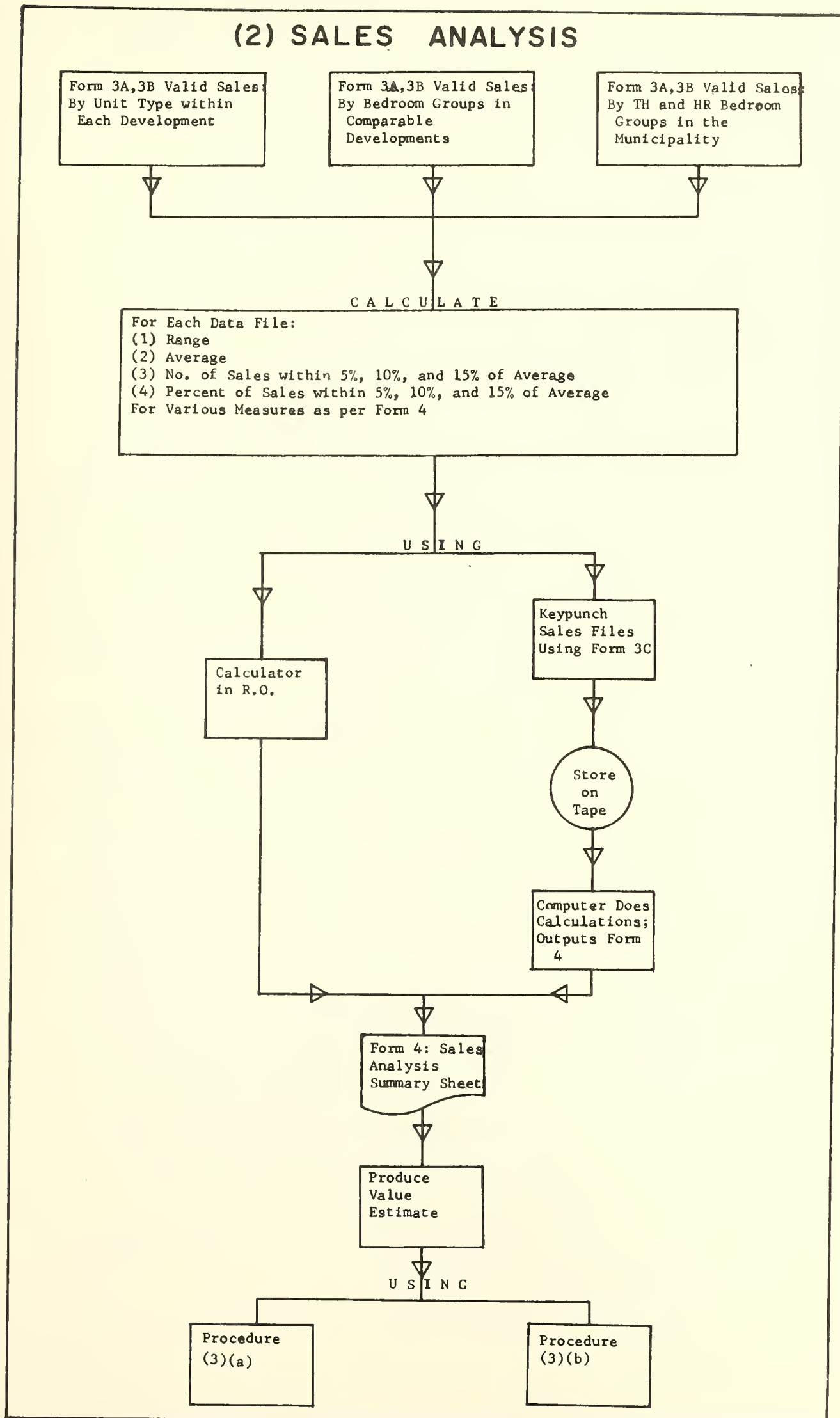


Figure 4.15

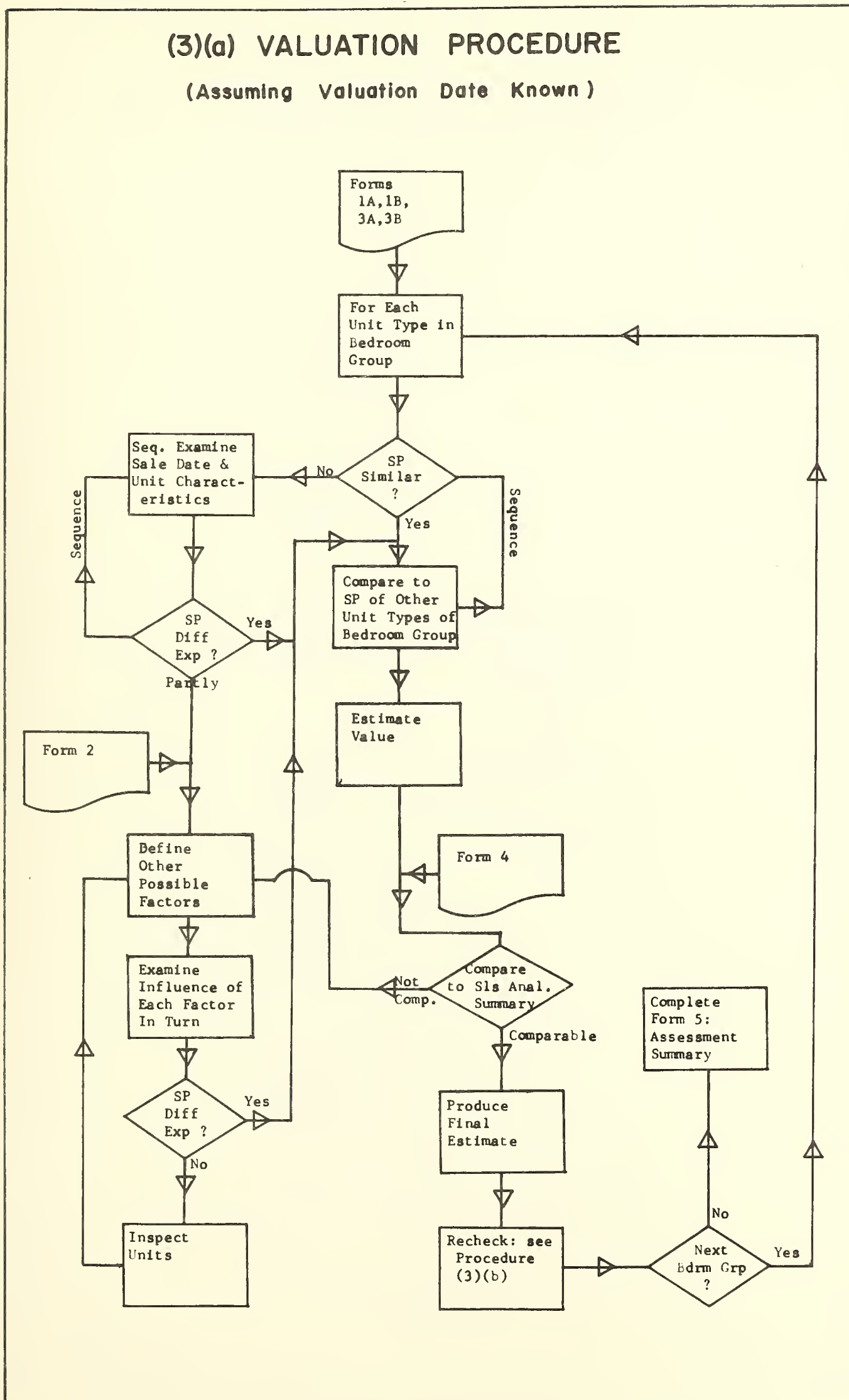
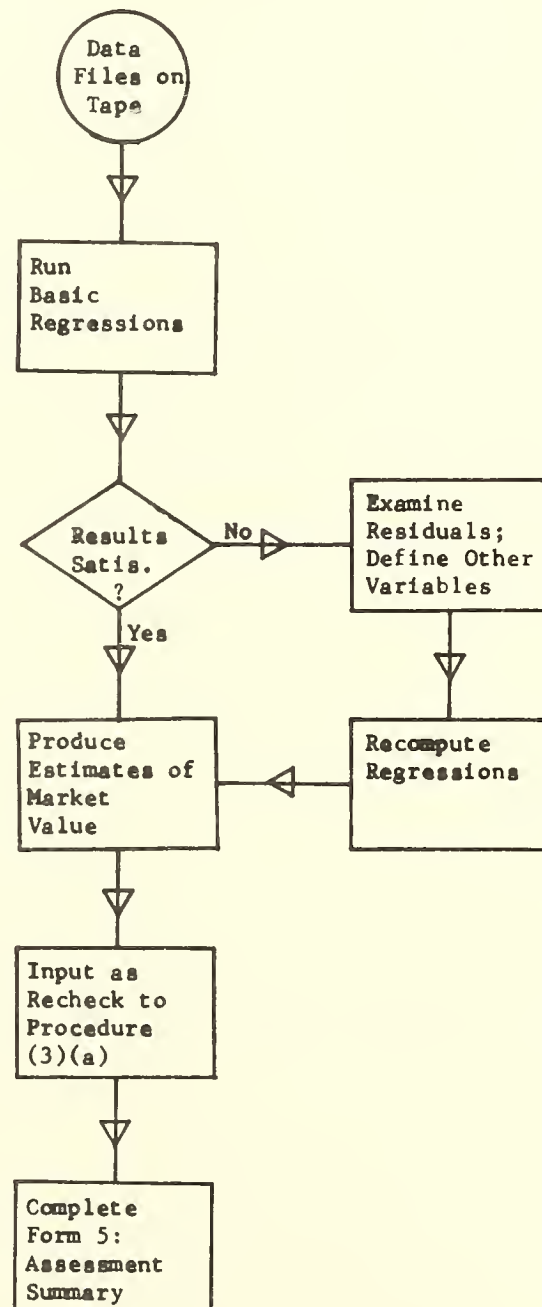
(3)(a) VALUATION PROCEDURE**(Assuming Valuation Date Known)**

Figure 4.16

**(3)(b) VALUATION PROCEDURE
USING MULTIPLE REGRESSION
(Assuming Valuation Date Known)**



V. DATA OUTPUT

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V. Data Output

(A) Output Related to the Assessment Function

(1) Statutory Assessment Forms

There are two types of data output which are required by statute. These are assessment notices and the assessment roll.

(a) Assessment Notices

There are three main types of assessment notices each of which is included as an example herein.

(i) Regular

The regular assessment notice may be found in Figure 5.1.

(ii) Section 43

Figure 5.2 presents assessment notice used under Section 43 of The Assessment Act. The Form varies little from the regular form and like it, is printed by computer.

(iii) Section 44

Figure 5.3 illustrates the type of assessment notice required under Section 44 of The Assessment Act. There is little difference between this version of the notice and the regular assessment notice except for the reference to Section 44.

(b) Assessment Roll

The Assessment Roll (Figure 5.4) is the second major type of statutory assessment form which is printed by computer. Until this year production of the assessment roll was on an annual basis but this requirement has been altered by The Assessment Amendment Act, 1971.

(2) Special Assessment Notices

A number of special assessment notices used in relation to statutes other than The Assessment Act have recently been

5-2

THIS IS NOT A TAX BILL

MADE IN 19 FOR TAXATION YEAR 19

NOTE: IF YOU DEEM YOURSELF IMPROPERLY ASSESSED IN ANY RESPECT YOU OR YOUR AGENT MAY APPEAL ON OR BEFORE THE DATE SPECIFIED. NOTIFY THE UNDERSIGNED * IN WRITING OF YOUR COMPLAINT AND IT WILL BE TRIED BY THE ASSESSMENT REVIEW COURT.

NOTE: WHERE PROPERTY IS OCCUPIED BY A TENANT, TAXATION FOR SCHOOL PURPOSES IS DETERMINED ACCORDINGLY AS THE TENANT IS ASSESSED FOR SCHOOL SUPPORT.

Figure 5.2

NOTICE OF ASSESSMENT

THIS IS NOT A TAX BILL
MADE IN 19 FOR TAXATION YEAR 19

WARD

TAKE NOTICE THAT YOU ARE ASSESSED FOR TAXATION AS SPECIFIED BELOW. IF YOU DEEM YOURSELF IMPROPERLY ASSESSED IN ANY RESPECT YOU OR YOUR AGENT MAY APPEAL ON OR BEFORE THE DATE SPECIFIED. NOTIFY THE UNDERSIGNED * IN WRITING OF YOUR COMPLAINT AND IT WILL BE TRIED BY THE ASSESSMENT REVIEW COURT.

SEE REVERSE SIDE FOR: (I) APPEAL PROCEDURES (II) CODES USED ON NOTICE		PARTICULARS OF PERSONS ASSESSED						
MUNICIPALITY	NAMES AND ADDRESSES OF OWNERS, LESSEES, TENANTS & OCCUPIERS	MARITAL STATUS	ALIEN STATUS	ELECTORAL STATUS	RELIGION	OCCUPATION	YEAR OF BIRTH	CORPORATION
ASSESSMENT COMMISSIONER								
YOU ARE ASSESSED AS A	SCHOOL SUPPORTER							
DESCRIPTION OF PROPERTY ASSESSED (PLAN OR CONCESSION, LOT NUMBER)	OCCUPANTS PORTION	TOTAL REAL PROPERTY	LIABLE FOR TAX RATE			LAST DAY FOR APPEAL		
	L	L	RP			DATE MAILED BUSINESS PERCENTAGE		
	B	B	RS					
	T	T	CP					
	EL	E	CS					
	EB	BLDG. OTHER	BP					
	ET		BS					

NOTE: WHERE PROPERTY IS OCCUPIED BY A TENANT, TAXATION FOR SCHOOL PURPOSES IS DETERMINED ACCORDINGLY AS THE TENANT IS ASSESSED FOR SCHOOL SUPPORT.

YOU ARE ASSESSED UNDER SECTION 43 OF THE ASSESSMENT ACT. TAXES WILL BE LEVIED ON THE ABOVE ASSESSMENT TO

Figure 5.3

NOTICE OF ASSESSMENT

THIS IS NOT A TAX BILL

MADE IN 19 FOR TAXATION YEAR 19

WARD

TAKE NOTICE THAT YOU ARE ASSESSED FOR TAXATION AS SPECIFIED BELOW. IF YOU DEEM YOURSELF IMPROPERLY ASSESSED IN ANY RESPECT YOU OR YOUR AGENT MAY APPEAL ON OR BEFORE THE DATE SPECIFIED. NOTIFY THE UNDERSIGNED * IN WRITING OF YOUR COMPLAINT AND IT WILL BE TRIED BY THE ASSESSMENT REVIEW COURT.

SEE REVERSE SIDE FOR: (I) APPEAL PROCEDURES (III) CODES USED ON NOTICE		PARTICULARS OF PERSONS ASSESSED						
MUNICIPALITY	OWNERS, LESSEES, TENANTS & OCCUPIERS	MARITAL STATUS	ALIEN STATUS	ELECTORAL STATUS	RELIGION	OCCUPATION	YEAR OF BIRTH	SCHL. SLIP CORPORATION
ASSESSMENT COMMISSIONER								
YOU ARE ASSESSED AS A	SCHOOL SUPPORTER							
DESCRIPTION OF PROPERTY ASSESSED (PLAN OR CONCESSION, LOT NUMBER)	OCCUPANTS PORTION	TOTAL REAL PROPERTY	LIABLE FOR TAX RATE		LAST DAY FOR APPEAL			
	L	L	RP	DATE MAILED				
	B	B	RS					
	T	T	CP					
	EL	E	CS					
	EB	BLDG. OTHER	GP					
	ET		BS	BUSINESS PERCENTAGE				

NOTE: WHERE PROPERTY IS OCCUPIED BY A TENANT, TAXATION FOR SCHOOL PURPOSES IS DETERMINED ACCORDINGLY AS THE TENANT IS ASSESSED FOR SCHOOL SUPPORT.

YOU ARE ASSESSED UNDER SECTION 44 OF THE ASSESSMENT ACT. TAXES WILL BE LEVIED ON THE ABOVE ASSESSMENT TO

Figure 5.4

County

District

cnty. mun. map div. sub-div.

Municipality

For taxation purposes

[illegible]

produced. These are in a form which allows them to be printed by computer.

(a) Ontario Northland Transportation Commission

Since the Ontario Northland Transportation Commission is a provincially-owned transportation utility it is exempt from taxation. However, the Commission pays grants-in-lieu of taxes under Section 3/P3 of The Municipal Tax Assistance Act. Municipalities having Commission property within their boundaries use the form illustrated in Figure 5.5 to obtain the required grants.

(b) Power Commission

A second type of grant-in-lieu assessment notice is used for Ontario Hydro-Electric Power Commission properties. The Power Commission Act, Section 48 requires these payments.

(c) Conservation Authorities

The Conservation Authorities Act, 1968, Section 31 requires conservation authorities to pay taxes on lands under their jurisdiction. A special assessment notice (not indicated here) is used in this case.


(d) Crown Properties

All lands held by the provincial government are exempted from taxes unless rented to tenants. However, as in the case of the Ontario Northland Transportation Commission grants-in-lieu of taxes are paid to municipalities containing crown properties. Figure 5.6 is an example of the assessment notice to be used in such cases.

(3) Assessment Data Sheet

The ADS is both an input (see Ch. 1) and an output document. Figure 5.7 is a copy of the new form which incorporates the same principle of field updating as was used in the "Municipal Enumeration Notice".

Figure 5.5



ONTARIO NORTHLAND TRANSPORTATION COMMISSION
The Municipal Tax Assistance Act - Sec. 3:3

VALUATION NOTICE FOR 19___ TAXES

MUNICIPALITY OF _____

DISTRICT OF _____

BUSINESS ASSESSMENT

DESIGNATION OF PROPERTY			BUSINESS ASSESSMENT			
ROLL NO	LOCATION STREET - LOT CONCESSION - PLAN	SIZE OF LOTS	TOTAL ASSESSMENT	%	AMOUNT	TOTAL

ANY APPEAL AGAINST THIS VALUATION SHALL BE MADE WITHIN 21 DAYS OF THE MAILING OF THIS NOTICE TO THE SECRETARY OF THE ONTARIO MUNICIPAL BOARD, 123 EDWARD STREET, TORONTO, ONTARIO. SEND THE TAX BILL IN TRIPLICATE FOR EACH VALUATION NOTICE TO COUNSEL, ONTARIO NORTHLAND TRANSPORTATION COMMISSION, 135 REGINA STREET, NORTH BAY, ONTARIO.

FORM DWA 525

MAILED

VALUATIONS MADE BY

TAX BILL TO BE BASED ON THE RATE FOR GENERAL PURPOSES ONLY AND SHALL NOT INCLUDE SCHOOL RATES

70 5182

CONTINUOUS FORMS LIMITED



Figure 5.6

The Municipal Tax Assistance Act

VALUATION NOTICE FOR GRANTS IN LIEU OF 19 TAXES

Municipality:

County of

Department of

Designation of Property

Roll No.	Location — Street — Lot — Concession — Plan	
	Size of Lot	
Property type and/or use:		

Assessment Total	Business Total	Valuation Made By	
\$	\$		
		Mailed on	

Any appeal against this Valuation shall be made within 21 days of the mailing of this Notice to the Secretary of The Ontario Municipal Board, 123 Edward Street, Toronto, Ontario.

This Section to be completed by Municipality

as a claim for a Grant in Lieu of Taxes
on the property shown above.

<u>Realty Assessment</u>		<u>General Municipal Mill Rate</u>		<u>Total Grant</u>
\$	X	=	\$
Business Assessment				
\$	X	=	\$
				\$

The Mill Rate for General Municipal Purposes is to be
that which is levied on Commercial Properties

THREE COPIES TO BE SENT TO:
Director of Municipal Subsidies Branch
Department of Municipal Affairs
801 Bay Street, Toronto 181, Ontario

FIGURE 5.7

[illegible]

(4) Sales Analysis

(i) Single-Family

Very briefly, sales analysis as performed by the Methodology Section involves a stratification stage in which single-family residences are classified into types by the A.I.D. programme and a model building stage in which multiple regression analysis is used to arrive at a predictive equation for market value of the property types identified in the A.I.D. stratification.

(a) A.I.D. Tree

Figure 5.8 presents the results of a stratification done on single-family residences in Oshawa. Some of the classification criteria for housing into market value types were floor area, building age, location, and date of sale.

(b) Multiple Regression Equations

Equations representing models explaining influences on sale price were derived for the different housing types by multiple regression analysis. Figure 5.9 presents the different equations for each market type.

(ii) Condominiums

The valuation procedure adopted by the Division to assess condominium developments appears in Chapter IV. The outcome of this multiple regression technique is a summarized account of all available data by unit-type. (Figure 5.10)

With this information and other data which the assessor finds helpful in his appraisal, the market value of each unit-type is determined. Finally, the market value of each unit is inserted on the "Condominium Assessment Summary" along with any court date that may follow. (Figure 5.11)

Figure 5.8

Result of A.I.D. Run
Oshawa Sales Study

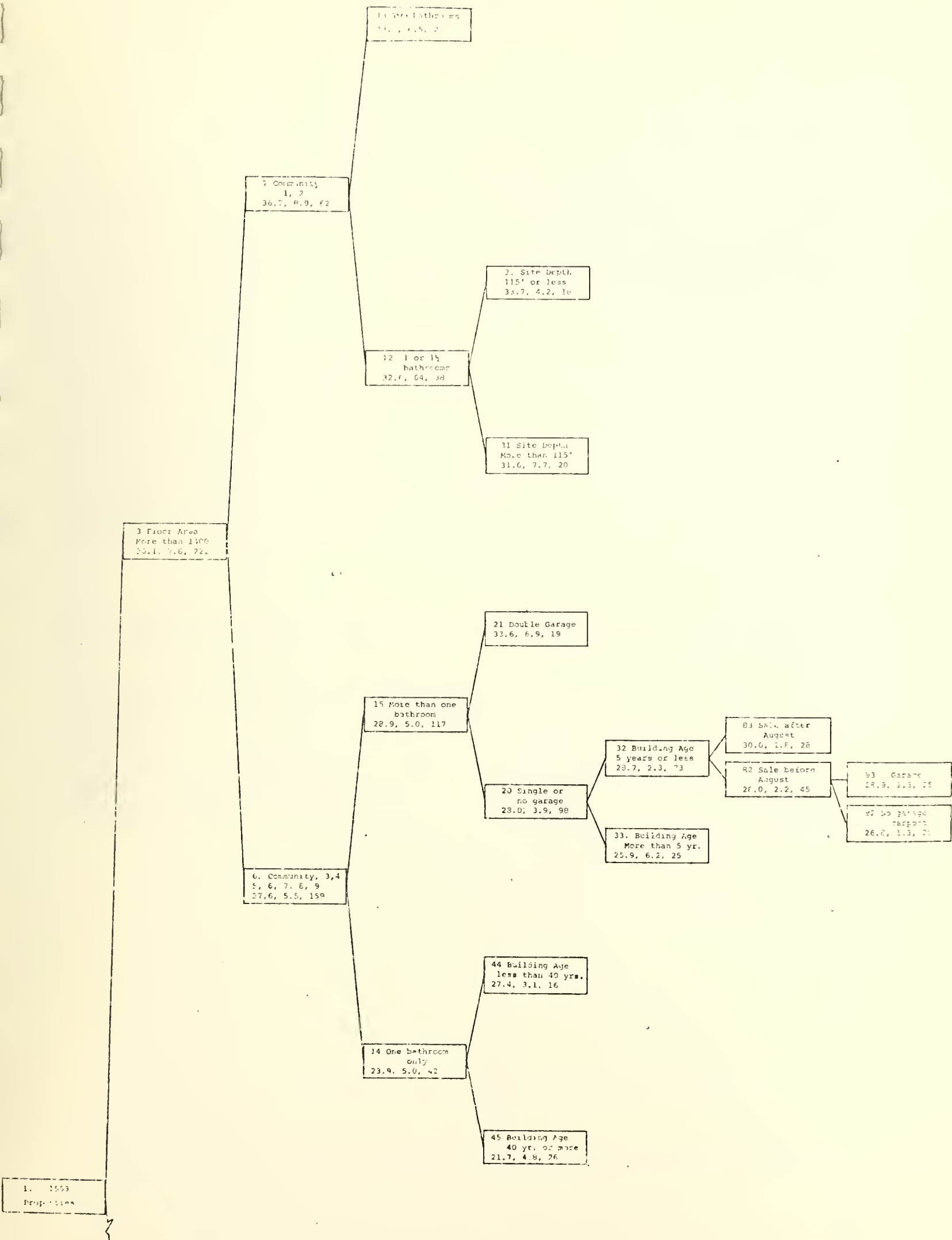


Figure 5.9

SOME PRELIMINARY MODELSOSHAWA SINGLE-FAMILY

LARGEST HOUSES	SEMI-DETACHED
<p>Estimated Sale Price (Assessment)</p> <p>= \$3378</p> <p>+ \$7.03 x Total Floor Area</p> <p>- \$174 x Building Age</p> <p>+ \$3380 X Distance 401 (miles)</p> <p>- \$4812 if Brick</p> <p>+ \$56 x Site Frontage</p> <p>+ \$309 x Date of Sale</p> <p>+ \$3638 if Double Garage</p> <p>+ \$1327 x No. of Rooms</p> <p>- \$1265 x No. of Bedrooms</p> <p>+ \$221 x No. of Bathrooms</p> <p>+ \$1489 if Single Garage</p> <p>+ \$14 x Site Depth</p> <p>- \$3168 x Distance Downtown (miles)</p> <p>- \$2323 if in Community 4</p> <p>+ \$2357 if in Community 8</p>	<p>Estimated Sale Price (Assessment)</p> <p>= \$13,547</p> <p>+ \$6.66 x Total Floor Area</p> <p>- \$1050 if in Community 6</p> <p>+ \$475 if Site Shape is Regular</p>
NEWER HOUSES, NO GARAGE	NEWER, SMALLER HOUSES, GARAGE
<p>Estimated Sale Price (Assessment)</p> <p>= \$16,447</p> <p>- \$1779 if in Community 9</p> <p>+ \$35 x Site Frontage</p> <p>+ \$160 x Date of Sale</p> <p>+ \$6.11 x Total Floor Area</p>	<p>Estimated Sale Price (Assessment)</p> <p>= \$2084</p> <p>+ \$428 x No. of Bathrooms</p> <p>+ \$403 x Date of Sale</p> <p>+ \$15 x Total Floor Area</p> <p>+ \$1298 if Single Garage</p> <p>- \$5092 if in Community 7</p> <p>- \$1133 if Site Shape is Regular</p> <p>- \$2374 if Brick</p> <p>+ \$1529 if in Community 1</p>

FORM: 4

5-13

Figure 5.11

[illegible]

(5) Assessment Court Brief

Figure 5.12 represents the type of computer-produced assessment information summary used for appeal purposes in Metropolitan Toronto. It serves as a useful aid to the assessor doing the appeal and permits the recording of appeal results (a form of data collection).

(6) Assessor's Return

Each year municipalities are required by the Department of Municipal Affairs, to submit a return or census of assessment, population and area. The return must be certified by the Assessment Commissioner and consists of six pages of questions (see Figure 5.13(a-f)). Schedule 1 (Figure 5.13(b)) deals with real property and business assessment upon which taxes for the year are to be based. Schedule 2 (Figure 5.13(c)) deals with real property and business assessment upon which education taxes for the year are based. Schedule 3 (Figure 5.13(d)) covers exempt properties, Schedule 4 (figure 5.13(e)) queries additional assessment information such as fixed assessment and number of vacant and developed properties. Finally, Schedule 5 (Figure 5.13(f)) covers population information and area.

The information thus gathered is used for calculating equalization factors and determination of provincial grants to the municipalities in question.

(7) Assessor's Handbook of Cost Factors

Division I on Data Collection briefly dealt with the questionnaire used to gather construction cost information from contractors. The result of the compilation of the results by the Cost Analysis Section of the Assessment Standards Branch is, of course, the Assessor's Handbook of Cost Factors samples of which are included here. Table 1.6 lists cost factor tabulations for two different shapes

(C and D) of Class C residences of different area and sub-class.

(B) Output Derived for Outside Users of Assessment Information

(1) Collector's Roll

Section 516 of The Municipal Act specifies what information is to be included in the collector's roll (Figure 5.14) which is used for municipal property tax collection purposes. Obviously this information is derived through the application of municipal mill rates on different types of property and is used in conjunction with the assessment roll.

(2) Tax Notice

The tax notice (Figure 5.15) is the actual tax bill which municipalities send to property owners. On it are included both total assessment and various tax levies such as general municipal levy, school levies, and special area rates.

(3) Voter's List

Figure 5.16 contains a sample portion of a voter's list. This list is to be based on an analysis of the information collected by the biennial municipal enumeration according to the criteria set in The Municipal Elections Act, 1972, to ascertain voter eligibility.

(4) Census of Population

Figure 5.17 illustrates a portion of a municipal population census based on information derived from the Assessment Master Tape. This is one of many possible forms which such a census might take.

ASSESSMENT COURT BRIEF (USED IN METRO)

ASSESSMENT COURT BRIEF (USED IN METRO)

ASSESSMENT YEAR
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1992
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1994
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2100

ASSESSMENT COURT BRIEF



DEPARTMENT OF MUNICIPAL AFFAIRS
801 BAY STREET, TORONTO 5, ONTARIO

RETURN OF ASSESSMENT, POPULATION AND AREA
OF
A LOCAL MUNICIPALITY

according to the last revised assessment roll
upon which taxes for the year 1971 will be levied

The Corporation of the of
in the County, Regional Municipality or District of

.....

CERTIFICATE

I certify that the assessment, population and area entered on this Return are in accordance with the Assessment Roll upon which the taxes for the year 1971 are to be levied (except that if business is assessed under Section 82 of The Assessment Act, the business assessment upon which taxes for the year 1970 were levied has been entered)⁽¹⁾ and to which I have attached my affidavit as required by Section 49 (1) of The Assessment Act.

.....
Date

.....
Assessment Commissioner

Note (1) If business is not assessed under Section 82 of The Assessment Act, delete the words in parentheses.

5-19

Schedule I

Note (3) Assessments which are subject to payments in lieu of taxes including payments under Section 35 of The Assessment Act are NOT to be entered in this schedule.

- (i) The sum of 'a' plus 'e', Schedule 1, must agree with the sum of 'i' plus 'k' on Schedule 2.
- (ii) The sum of 'b' plus 'f', Schedule 1, must agree with the sum of 'm' plus 'o' on Schedule 2.
- (iii) The sum of 'c' plus 'g', Schedule 1, must agree with the sum of 'j' plus 'l' on Schedule 2.
- (iv) The sum of 'd' plus 'h', Schedule 1, must agree with the sum of 'n' plus 'p' on Schedule 2.
- (v) Item 'x', Schedule 1, must agree with Item 'y', Schedule 2.

Note (4)

- The sum of items 's' must agree with item 't'. Schedule 4 part 6.
- The sum of item 't' must agree with item 't'. Schedule 4 part 6.
- The sum of item 'u' must agree with item 'u'. Schedule 4 part 6.
- The sum of items 'v₁ & v₂' must agree with item 'v'. Schedule 4 part 6.
- The sum of items 'w₁ & w₂' must agree with item 'w'. Schedule 4 part 6.

Note (4)

- (i) The sum of items 's' must agree with item 's'. Schedule 4 part 6.
- (ii) The sum of item 't' must agree with item 't'. Schedule 4 part 6.
- (iii) The sum of item 'u' must agree with item 'u'. Schedule 4 part 6.
- (iv) The sum of items 'v1 & v2' must agree with item 'v'. Schedule 4 part 6.
- (v) The sum of items 'w1 & w2' must agree with item 'w'. Schedule 4 part 6.

Figure 5.13 (c)

REAL PROPERTY AND BUSINESS ASSESSMENT⁽¹⁾ UPON WHICH THE EDUCATION TAXES FOR THE YEAR 1971 WILL BE LEVIED

[illegible]

Note (1) If the assessment of business is taken separately under Section 82 of The Assessment Act, please insert in this schedule the assessment of business taken in 1970 upon which taxes for the year 1970 were levied.

Note (2) Show each item in the preceding column as a percentage of the total of that column, that is the amount z.

Note (3)

- (i) The sum of 'i' plus 'k'; must agree with the sum of 'a' plus 'e' on Schedule 1
- (ii) The sum of 'm' plus 'o'; must agree with the sum of 'b' plus 'f' on Schedule 1
- (iii) The sum of 'j' plus 'l'; must agree with the sum of 'c' plus 'g' on Schedule 1
- (iv) The sum of 'n' plus 'p'; must agree with the sum of 'd' plus 'h' on Schedule 1
- (v) Item 'y' Schedule 2 must agree with item 'x', Schedule 1

Figure 5.13 (d)

Schedule 3

REAL PROPERTY AND BUSINESS ASSESSMENT EXEMPT FROM TAXATION⁽¹⁾

		Real Property Assessment		Business Assessment	
		\$	Number of Properties	\$	Total (\$)
I	Government of Canada				
	1. Eligible for payment in lieu of taxes under The Municipal Grants Act				
	(i) Registered in the name of the Crown				
	(ii) Registered in the name of a Crown Agency				
	2. Other Property				
	(i) Registered in the name of the Crown				
	(ii) Registered in the name of a Crown Agency				
II	Government of Ontario				
	1. Eligible for payment in lieu of taxes under The Municipal Tax Assistance Act or The Power Commission Act				
	(i) Registered in the name of the Crown				
	(ii) Registered in the name of a Crown Agency				
	2. Other Property				
	(i) Registered in the name of the Crown				
	(ii) Registered in the name of a Crown Agency				
III	Municipal and Public Education				
	1. Eligible for payment under Section 35 of The Assessment Act				
	2. Other Property				
	(i) Municipal				
	(ii) Education				
IV	Property owned by a religious, philanthropic or charitable organization				
V	Other property which is exempt from taxation				
	Total				

Note (1) For the purpose of this Schedule, disregard local improvement levies which can attach to exempt properties by virtue of The Local Improvement Act.

ADDITIONAL ASSESSMENT INFORMATION

Schedule 4

1. Date on which assessment roll was returned to the clerk (The Assessment Act, Section 46)

- (a) under The Assessment Act, Section 17
- (b) under The Assessment Act, Section 82 (if any) 1970

2. Fixed assessments

Name of Owner	Type of Business	Type of (1) Authorization	Date of		Assessment for Municipal Taxation		
			Commencement	Termination	Exempt	Fixed	Total

Note (1) Please indicate in each whether the fixed assessment was authorized by electors (E); or by a special act of the legislature (S.A.)

3. Major assessments

Indicate the name and the total taxable assessment of each taxpayer, the total taxable assessment of whose properties is in excess of 10 per cent of the total taxable assessment.

Name of Taxpayer	Total Taxable Assessment

4. The Residential Property Tax Reduction Act

Total number of residential properties (i.e. units separately assessed).

5. Real Property Assessment Located on Land Built On and Land Not Built On

Classification	Total Real Property Assessment			Number of Properties		
	Land Built On	Land Not Built On	Total Real Property	Land Built On	Land Not Built On	Total
Residential			s			
- A - Multiple Dwellings . . .			t			
- B - Other						
Farm			u			
Professional and Commercial			v			
- General Class			w			
Manufacturing and Industrial						
Total						

Note (1) Item s must agree with the sum of item s schedule 1; (2) Item t must agree with the sum of item t schedule 1; (3) Item u must agree with the sum of item u schedule 1; (4) Item v must agree with the sums of items v₁ & v₂ schedule 1; (5) Item w must agree with the sums of items w₁ & w₂ schedule 1.

POPULATION

Schedule 5

based on the census taken in the year 1970

1. Total population

(excluding those residing in the municipality on a seasonal basis only)

Deduct:

The persons, included in the above total, and who reside in the following:

- (i) institutions within the municipality
- (ii) defence establishments
- (iii) Indian reserves
- (a)

2. Analysis of the ages of the Population

3 and under	4	5	6-7	8-9	10-13	14	15	16-19	20-59	60-64	65-69	70 and over	TOTAL
													(b)

Note: (b) must agree with (a)

3. Population residing in the municipality on a seasonal basis only

(as excluded in item 1)

POLICE VILLAGES

1. Population (included in Item 1)

Name of Police Village	Population

2. Assessment (included in Schedule 1)

Name of police village

Taxable Assessment

Total Real Property \$..... \$..... \$.....

Number of properties

Business \$..... \$..... \$.....

Total Taxable Assessment \$..... \$..... \$.....

Total Exempt Assessment (included in Schedule 3) \$..... \$..... \$.....

Total Taxable and Exempt Assessment \$..... \$..... \$.....

AREA

in acres

1. Land

2. Land covered by water

Total

TABLE 5.1

SINGLE RESIDENTIAL

SECTION 2 PAGE 3

BUILDING COST FACTORS

BASE YEAR 1969

SHAPE A

CONSTRUCTION CLASS C

AREA CLASS	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1800	2000	2400	2800	3200
10	31.95	30.65	29.50	28.50	27.60	26.80	26.10	25.50	24.95	24.45	24.00	23.60	23.25	22.95	22.50	22.15	21.85	21.60	21.40
9.5	29.65	28.40	27.25	26.30	25.40	24.65	23.95	23.40	22.85	22.40	21.95	21.60	21.25	21.00	20.55	20.25	19.95	19.75	19.55
9	27.40	26.15	25.05	24.10	23.25	22.50	21.85	21.30	20.80	20.35	19.95	19.60	19.30	19.05	18.65	18.35	18.10	17.90	17.75
8.5	25.15	23.95	22.90	21.95	21.15	20.40	19.80	19.25	18.80	18.35	18.00	17.65	17.40	17.15	16.80	16.50	16.30	16.10	16.00
8	22.90	21.75	20.75	19.85	19.05	18.35	17.75	17.25	16.80	16.40	16.05	15.75	15.50	15.30	14.95	14.70	14.50	14.35	14.25
7.5	21.15	20.05	19.10	18.30	17.50	16.85	16.25	15.80	15.35	14.95	14.60	14.30	14.05	13.85	13.50	13.25	13.10	12.95	12.90
7	19.45	18.40	17.50	16.75	16.00	15.35	14.80	14.35	13.90	13.55	13.20	12.90	12.65	12.40	12.10	11.85	11.70	11.60	11.55
6.5	17.95	16.95	16.10	15.35	14.65	14.05	13.55	13.15	12.75	12.40	12.10	11.80	11.60	11.40	11.10	10.90	10.75	10.65	10.60

AREA CLASS	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1800	2000			
6	16.45	15.50	14.65	13.95	13.35	12.80	12.35	11.95	11.60	11.30	11.00	10.75	10.55	10.40	10.15	10.00			
5.5	15.25	14.30	13.50	12.80	12.25	11.75	11.30	10.95	10.65	10.35	10.05	9.80	9.65	9.50	9.25	9.15			
5	14.05	13.15	12.35	11.70	11.15	10.70	10.30	9.95	9.65	9.35	9.10	8.90	8.75	8.60	8.40	8.30			
4.5	12.85	12.00	11.25	10.65	10.15	9.75	9.40	9.10	8.85	8.60	8.35	8.20	8.05	7.95	7.75	7.70			
4	11.70	10.90	10.20	9.65	9.20	8.85	8.55	8.30	8.05	7.85	7.65	7.50	7.40	7.30	7.15	7.10			
3.5	10.65	9.90	9.30	8.80	8.40	8.05	7.80	7.55	7.35	7.20	7.05	6.95	6.85	6.80	6.65	6.60			
3	9.65	8.95	8.40	7.95	7.60	7.30	7.05	6.85	6.70	6.60	6.50	6.40	6.35	6.30	6.20	6.15			



SHAPE B

AREA CLASS	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1800	2000	2400	2800	3200
10	32.60	31.30	30.15	29.15	28.25	27.45	26.75	26.15	25.60	25.10	24.65	24.25	23.90	23.60	23.15	22.80	22.50	22.25	22.05
9.5	30.30	29.05	27.90	26.95	26.05	25.30	24.60	24.05	23.50	23.05	22.60	22.25	21.90	21.65	21.20	20.90	20.60	20.40	20.20
9	28.05	26.80	25.70	24.75	23.90	23.15	22.50	21.95	21.45	21.00	20.60	20.25	19.95	19.70	19.30	19.00	18.75	18.55	18.40
8.5	25.75	24.55	23.50	22.60	21.75	21.05	20.40	19.90	19.40	19.00	18.60	18.30	18.00	17.80	17.40	17.15	16.90	16.75	16.60
8	23.50	22.35	21.35	20.45	19.65	18.95	18.35	17.85	17.40	17.00	16.65	16.35	16.10	15.90	15.55	15.30	15.10	14.95	14.85
7.5	21.70	20.60	19.65	18.85	18.05	17.40	16.80	16.35	15.90	15.50	15.15	14.85	14.60	14.40	14.05	13.80	13.65	13.50	13.45
7	19.95	18.90	18.00	17.25	16.50	15.85	15.30	14.85	14.40	14.05	13.70	13.40	13.15	12.90	12.60	12.35	12.20	12.10	12.05
6.5	18.35	17.30	16.50	15.75	15.10	14.50	14.00	13.55	13.15	12.85	12.50	12.25	12.00	11.80	11.55	11.35	11.20	11.10	11.05

AREA CLASS	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1800	2000			
6	16.80	15.85	15.00	14.30	13.70	13.15	12.70	12.30	11.95	11.65	11.35	11.10	10.90	10.75	10.50	10.35			
5.5	15.55	14.65	13.80	13.15	12.50	12.05	11.65	11.25	10.95	10.65	10.35	10.15	9.95	9.80	9.60	9.45			
5	14.35	13.45	12.65	12.00	11.45	11.00	10.60	10.25	9.95	9.65	9.40	9.20	9.05	8.90	8.70	8.60			
4.5	13.10	12.25	11.50	10.90	10.40	10.00	9.65	9.35	9.10	8.85	8.60	8.45	8.30	8.20	8.00	7.95			
4	11.90	11.10	10.40	9.85	9.40	9.05	8.75	8.50	8.25	8.05	7.85	7.70	7.60	7.50	7.35	7.30			
3.5	10.85	10.10	9.45	8.95	8.55	8.25	7.95	7.75	7.55	7.40	7.25	7.10	7.05	6.95	6.85	6.80			
3	9.80	9.10	8.55	8.10	7.75	7.45	7.20	7.00	6.85	6.75	6.65	6.55	6.50	6.45	6.35	6.30			

ISSUED 5/1970

(Dollars per Square Foot of First Floor Areas NOT Including Basements)

PAYMENTS

[illegible]

Figure 5.15

[illegible]

(5) Other

A number of other types of computer-produced lists may be derived from assessment Statistical or Master Files. These include Jury Duty, Separate School Support and Local Improvement Charge Lists among others.

5-29

TOWNSHIP OF LANCASTER															PAGE 1
REP.#1 - COUNTY OF GLENGARRY															
73 MAP 06 A S S E S S M E N T S Y S T E M -- YEAR-END 1972 ANALYSIS OF POPULATION BY AGE GROUP															
MAP DIV. 00-0 SUB-DIV.000 TOTALS															
--0-1--	--2--	--3--	--4--	--5--	--6--	--7-8--	--9-10--	--11-12--	--13-14--	--15--	--16--	--17--	--18--	--19--	--20--
0	1	0	0	0	0	1	1	0	1	0	1	0	0	2	0
-21-25-	-26-30-	-31-35-	-36-40-	-41-45-	-46-50-	-51-55-	-56-59-	-60--	-61-65-	-66-69-	-70&UP-			--UNKN--	*TOTAL*
1	1	1	3	1	2	2	1	0	8	1	8	0	0	0	36
MAP DIV. 00-0 SUB-DIV.001 TOTALS															
--0-1--	--2--	--3--	--4--	--5--	--6--	--7-8--	--9-10--	--11-12--	--13-14--	--15--	--16--	--17--	--18--	--19--	--20--
1	1	1	0	1	0	3	3	4	3	1	0	0	2	0	0
-21-25-	-26-30-	-31-35-	-36-40-	-41-45-	-46-50-	-51-55-	-56-59-	-60--	-61-65-	-66-69-	-70&UP-			--UNKN--	*TOTAL*
1	3	1	5	1	5	1	2	0	0	0	2	0	0	2	43
MAP DIV. 00-0 SUB-DIV.002 TOTALS															
--0-1--	--2--	--3--	--4--	--5--	--6--	--7-8--	--9-10--	--11-12--	--13-14--	--15--	--16--	--17--	--18--	--19--	--20--
4	1	1	2	1	1	5	5	6	8	0	8	2	5	1	2
-21-25-	-26-30-	-31-35-	-36-40-	-41-45-	-46-50-	-51-55-	-56-59-	-60--	-61-65-	-66-69-	-70&UP-			--UNKN--	*TOTAL*
6	1	4	9	5	4	8	6	0	2	2	2	0	0	1	102
MAP DIV. 00-0 SUB-DIV.003 TOTALS															
--0-1--	--2--	--3--	--4--	--5--	--6--	--7-8--	--9-10--	--11-12--	--13-14--	--15--	--16--	--17--	--18--	--19--	--20--
2	1	1	1	1	0	3	5	6	1	1	2	2	0	2	1
-21-25-	-26-30-	-31-35-	-36-40-	-41-45-	-46-50-	-51-55-	-56-59-	-60--	-61-65-	-66-69-	-70&UP-			--UNKN--	*TOTAL*
2	3	4	4	6	7	5	5	3	7	4	15	0	0	2	96

VI. A FUNCTIONAL APPROACH TO ASSESSMENT DATA SYSTEMS

	<u>Page</u>
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VI. A Functional Approach to Assessment Data Systems

(A) Introduction

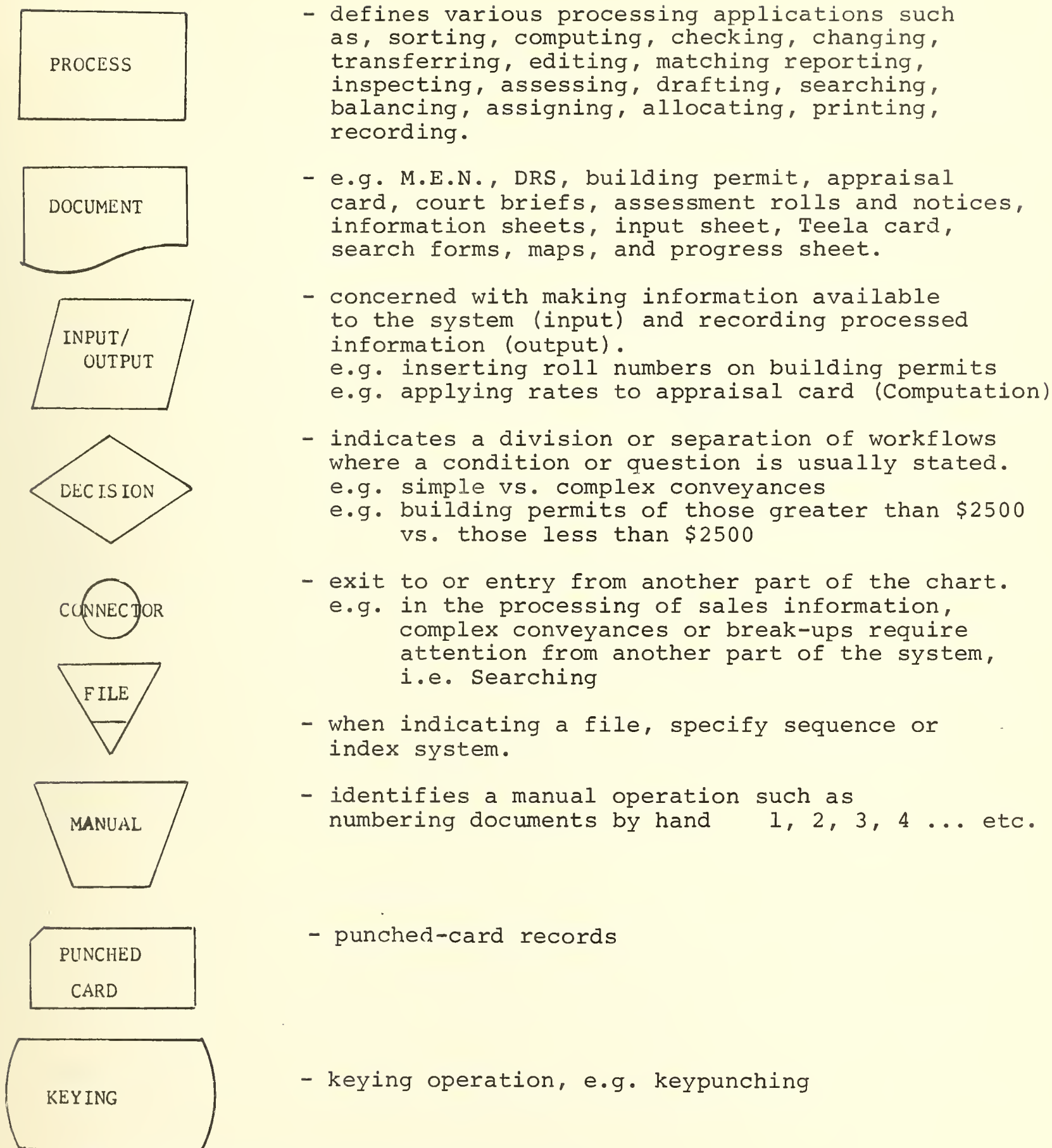
(1) Functional Analysis

The previous five chapters have used a classification approach to explain a fundamental information system. However, these stages of collection, coding, input, processing, and output have attempted to describe the total system rather than one specific part within the system. If these five principles of information flow are analyzed for each of the sub-systems that comprise the total system, you emerge with a procedural description of an assessment function. Functional analysis is extremely useful in studying assessment operations because it isolates one activity among many others and determines its effect upon the system as a whole. Also, because areas of responsibility are commonly assigned to either a sub-function, a unit function or a group of functions, the beginning and end of a particular routine are more definable and flow of information can be documented and understood more readily.

(2) Principles of Flowcharting

Among the various techniques to conduct a functional analysis, a common approach is to trace the flow of data and actions throughout the entire function as they occur and as they respond to certain demands from outside sources. With this method, the analyst can prepare a flowchart of the activity which permits a visual display of the routine. Flowchart representation is simply a graphical description of individual operations connected by flow lines to indicate sequence and movement. To aid in the classification and analysis of the activity as well as to abbreviate the presentation, symbols are usually inserted to designate the nature of each operation.

Here are some commonly used flowchart symbols with several examples on how each one can be used to illustrate assessment operations:



(B) Flowcharting Assessment Functions

To show how the above principles can be used to describe assessment functions, eight precharted procedures appear below:

(1) Sales Process

Figure 6.1 describes the receipt and processing of

property indentures. This two-dimensional flowchart illustrates how one document (the deed) creates two other documents (Teela worksheet and card), and how each record is used several times throughout the procedure. The "apportionment" function is expanded into individual steps in section 7 as is the "updating" function in section 8.

(2) Computation of the Local Modifier

Included with the flowchart is a narrative description of how one would calculate the local modifier (Figure 6.2(a)). Ideally, the flow diagram cannot be constructed until the procedure is adequately documented from one step to the next.

(3) Appraisal Process

Figure 6.3 is a good example to demonstrate how a flowchart can show a considerable amount of backtracking in a particular procedure. The assessor in the field has a number of alternative methods of handling work under different circumstances.

(4) Supplementary Assessments

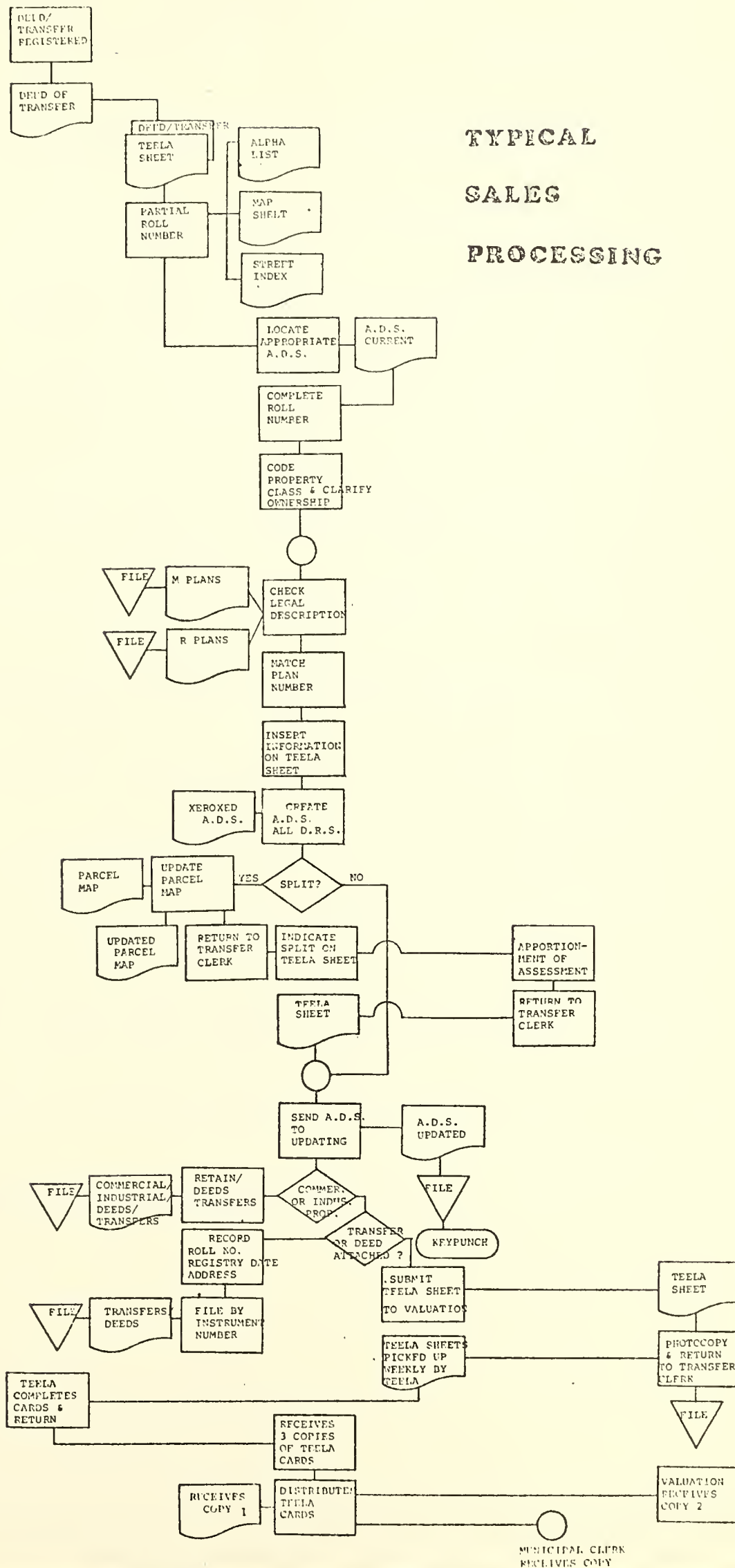
The end-product of one operation (the issuing of municipal building permits) initiates the beginning of another operation which involves the recording and processing of Section 43 assessments. The end-product of this procedure creates a further investigation by the Valuation section.

(5) Assessment Mapping

The purpose of the Mapping programme is to provide and maintain a large scale up-to-date cadastral map showing all property boundaries and dimensions, street allowances, utility lines, railroads, etc in each regional office. The assessment property maps are used to identify the location and assist in the description of properties. They are also used for comparative sales analysis and as evidence used in appeal hearings. All work is coordinated through the Mapping Supervisor who receives his priorities from the Services Manager. Map compilation is carried out using established mapping specifications and guidelines.

FIGURE 6.1

TYPICAL
SALES
PROCESSING



COMPUTATION OF THE LOCAL MODIFIER

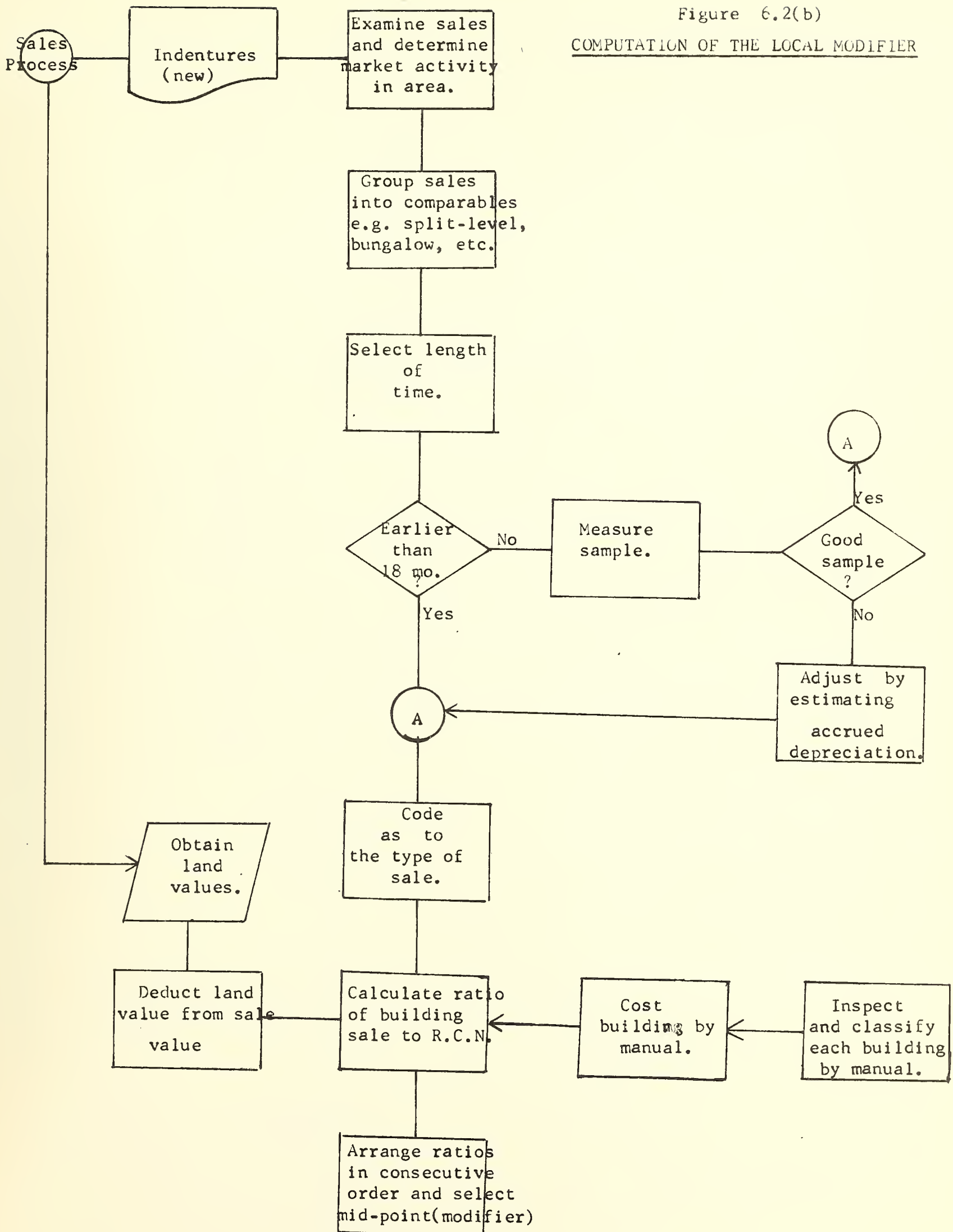
(Residential)

Example #2

Local modifiers use market data to relate replacement cost new for the base year and place in the cost manual to current conditions in local area.

1. Examine sales of all new structures, and determine level of market activity in area.
2. Group sales into comparable properties, e.g. split-level, bungalow or two storey houses.
3. Select the length of time (18 months) over which sales can be assembled for computing local modifiers.
4. If sales are dated 18 months or earlier retain for analysis.
5. If sales are dated later than 18 months, decide if the number of sales is sufficient for statistical analysis.
6. If sample number is adequate, file less recent sales and proceed with analysis.
7. If sample number is inadequate (i.e. little or no new construction), adjust by estimating accrued depreciation and proceed with analysis.
8. Code each document as to the type of sale and select "00" sales only .
9. Establish land values through vacant or raw land sales.
10. Deduct land value from sale value to obtain an estimation of the sale price of the structure.
11. Inspect and classify each building using the manual.
12. Cost each building using the manual to obtain an estimate of their cost if they had been constructed in Metro Toronto.
13. Calculate the ratio of building sale to the estimated R.C.N.
14. Arrange percentage ratios in ascending order and select the median (mid-point) or local modifier.

Figure 6.2(b)

COMPUTATION OF THE LOCAL MODIFIER

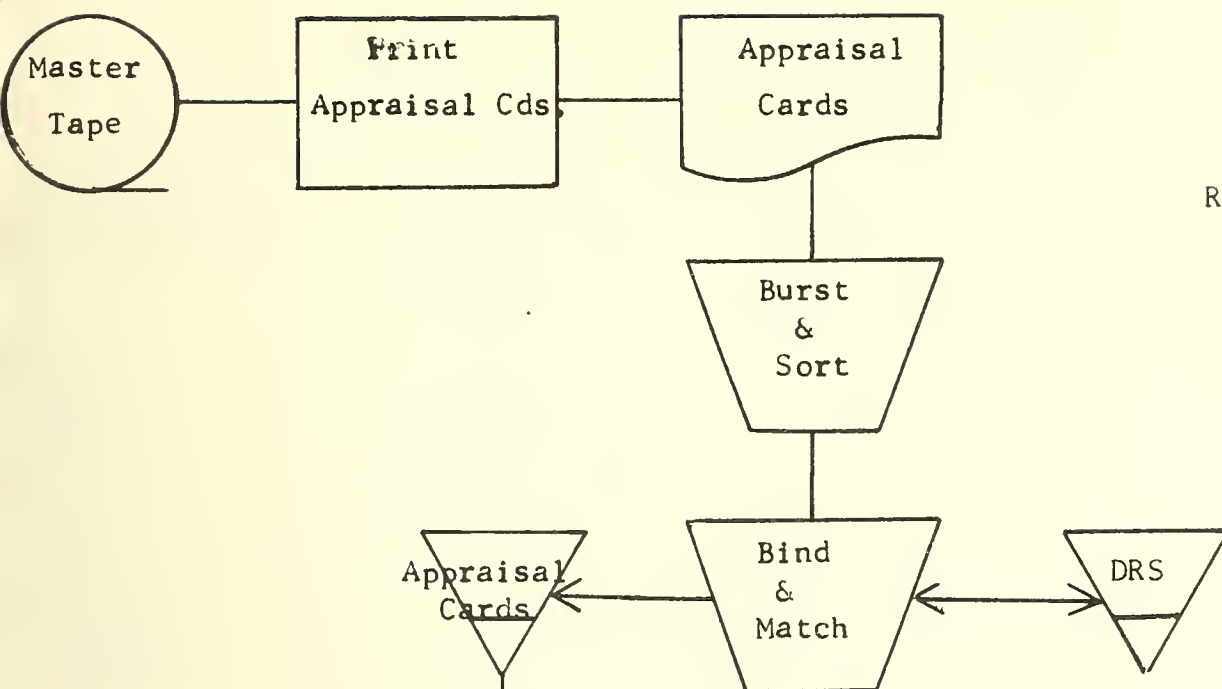


FIGURE 6.3
REASSESSMENT PROCESS
(residential)

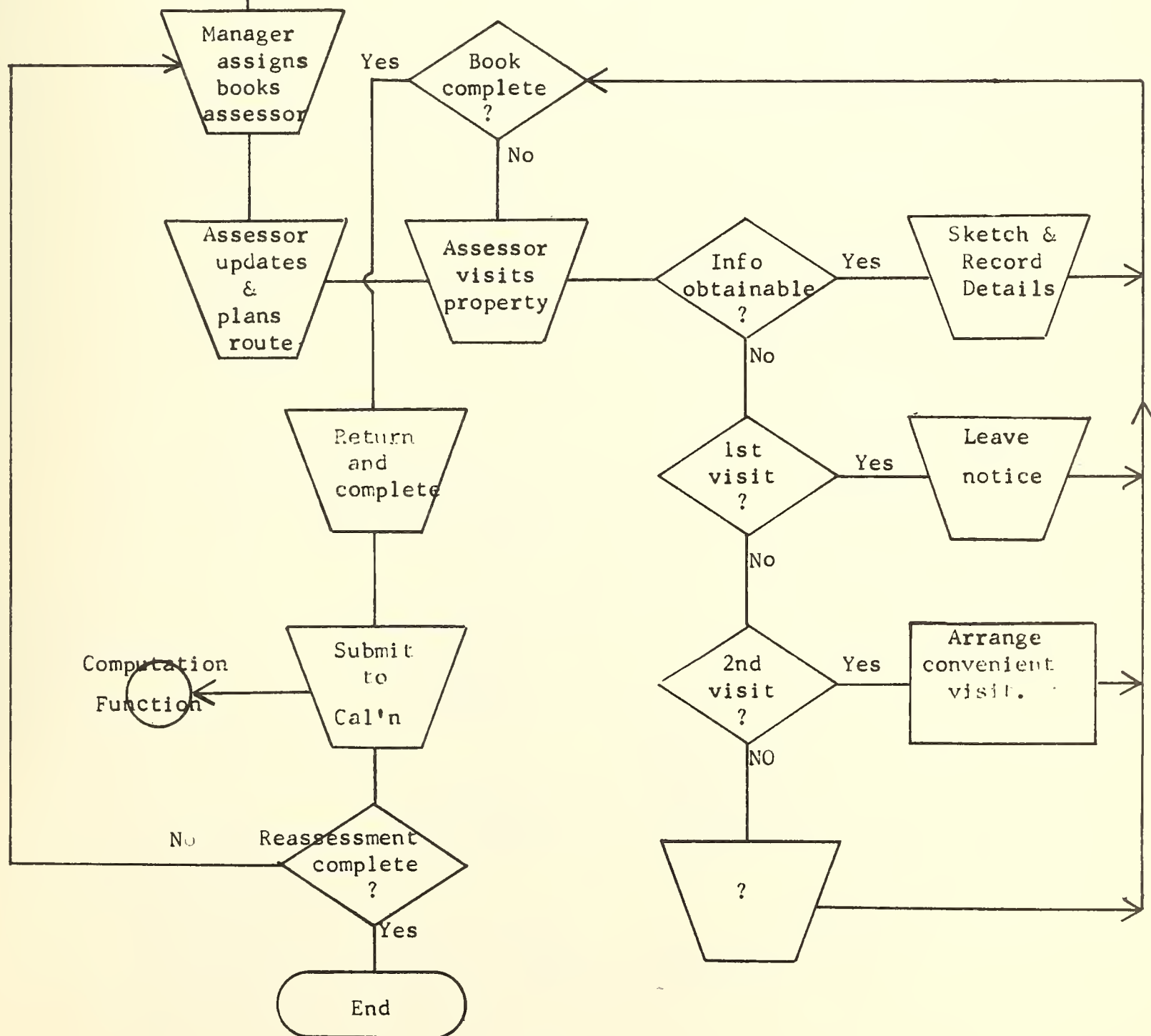


FIGURE 6.4

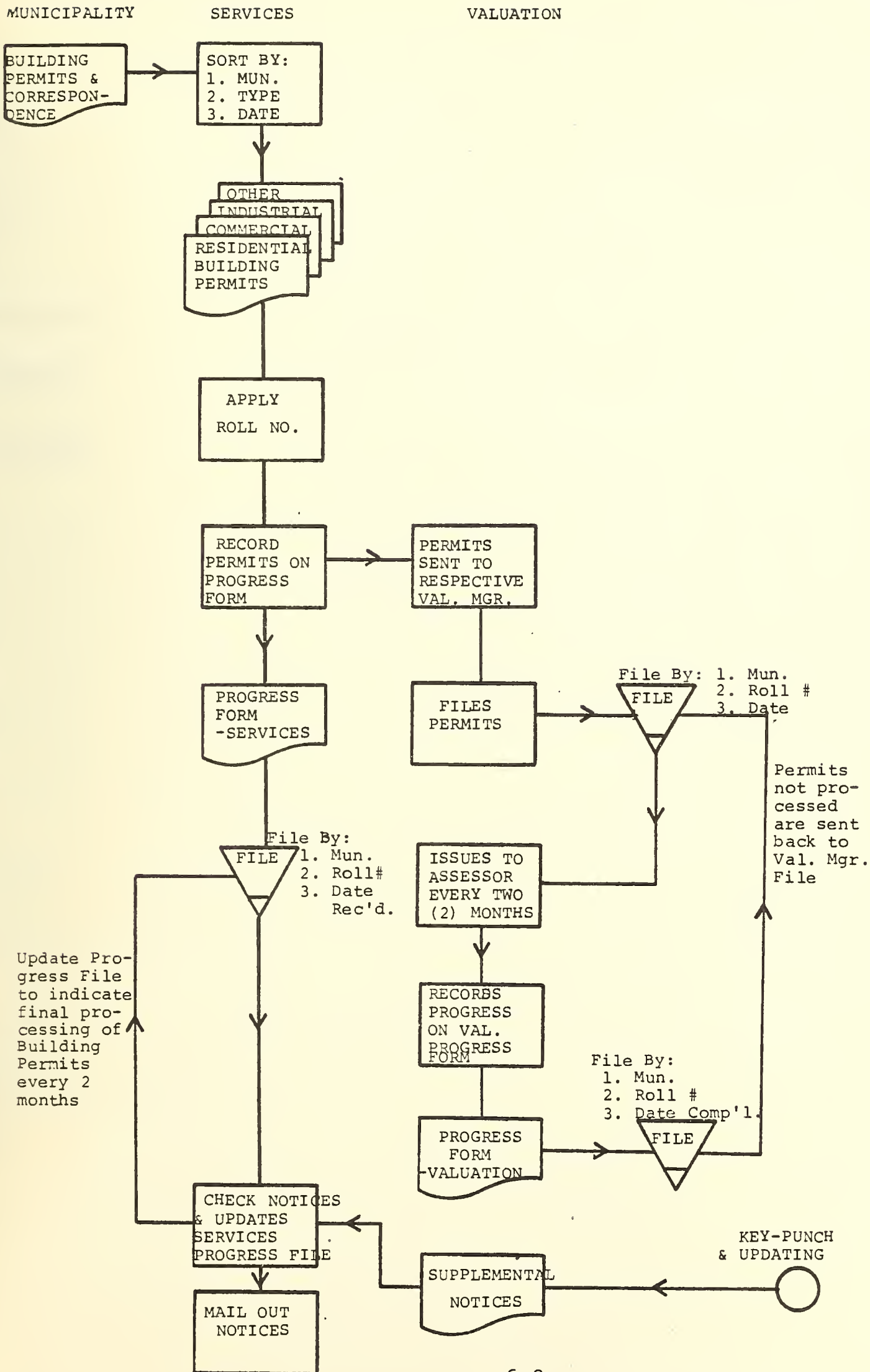


FIGURE 6.5

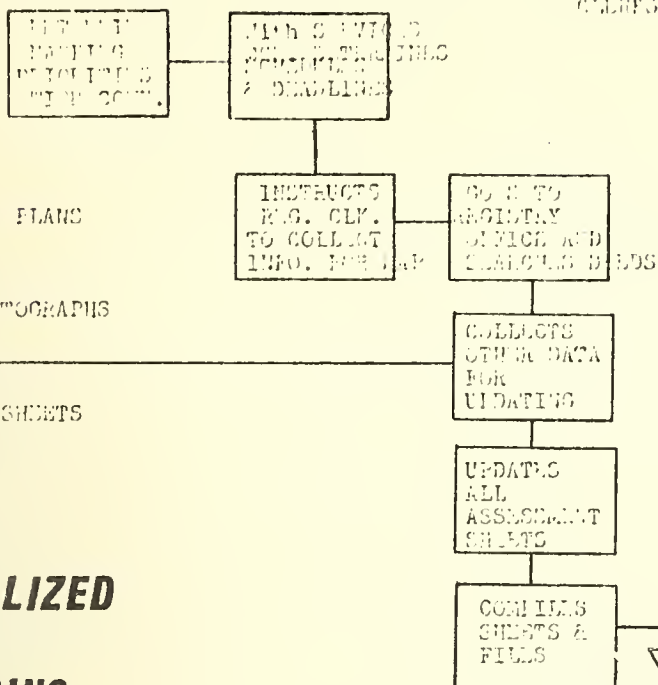
**IDEALIZED
MAPPING
PROGRAM**

REGISTERED PLANS
AERIAL PHOTOGRAPHS
TELLA POLYSHEDS

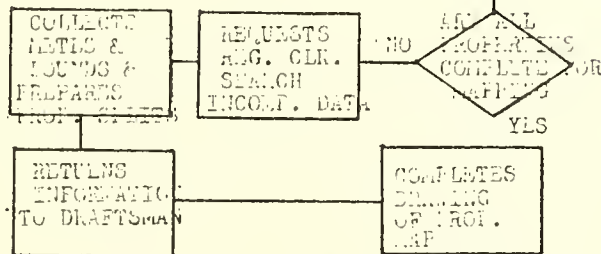
MUNICIPAL & GOVERNMENT AGENCIES

MUNICIPAL & GOVERNMENT AGENCIES

RECEIVES PRINTS



OBTAINS
ASSET
SHEET FILE
& PLATS INFO.



CHECKS FOR
OMISSIONS
MISTAKES &
STANDARDS

CORRECTS
ALL
MISTAKES

PROPERTY
MAPS
FILED

INDICATES
COMPLETED
AREA ON
BUSINESS MAP

RECEIVES
REQUESTS OF
PROPERTY
MAPS

RECEIVES
PRINTS OF
PROPERTY
MAPS

RECORDS
ALL REQUESTS
FOR PRINTS

PREPARES
REQUESTS &
SEND PRINTS
TO FIELD

RECEIVES
PROPERTY
MAP PRINTS

END OF
DRAFTSMAN
NO. 1 PROGRAM
SPECIAL

DRAFTS
PLANS OF
SUBDIVISIONS
Etc.

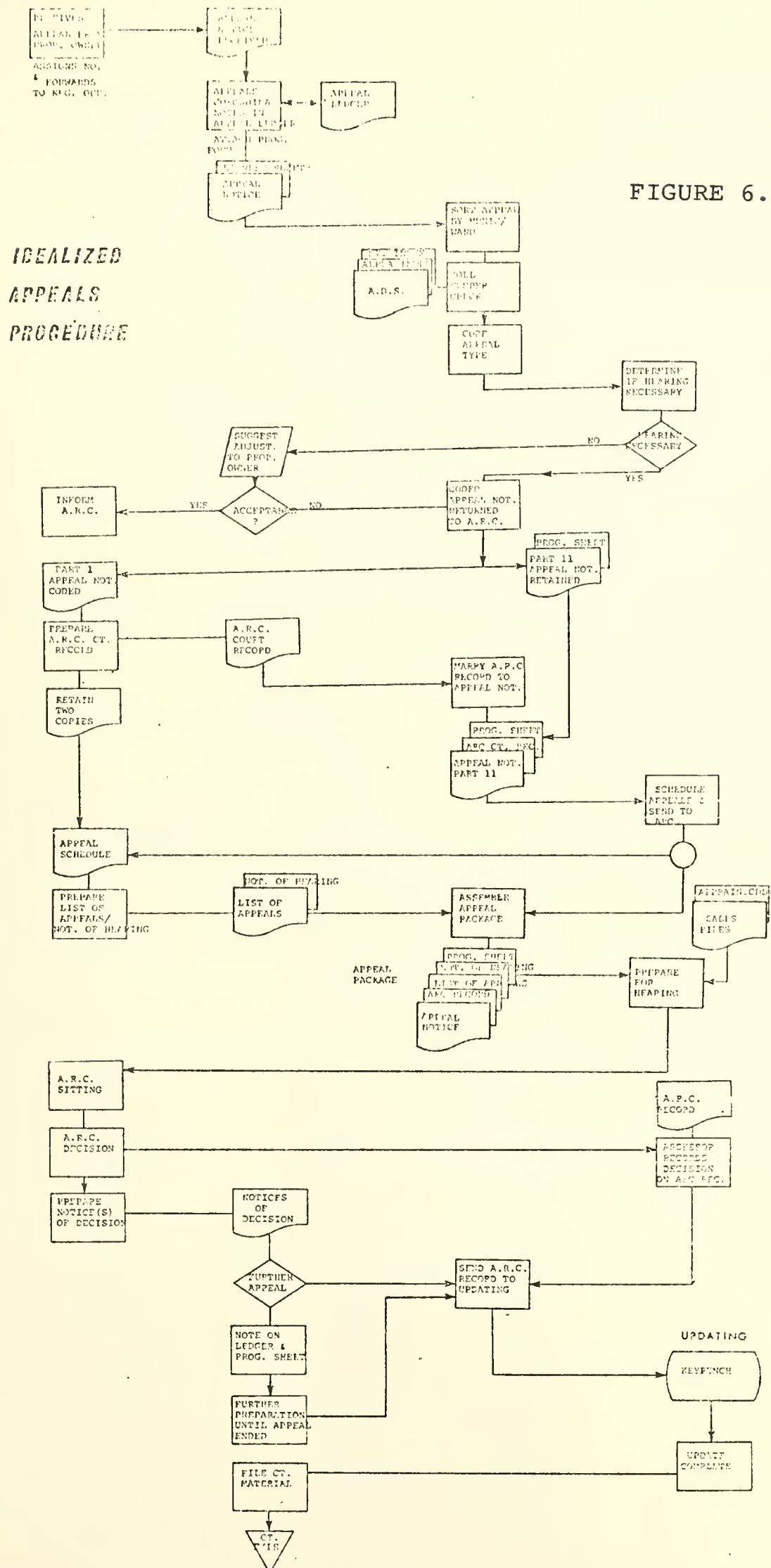


FIGURE 6.7

APPORTIONMENTS

idealized flowchart

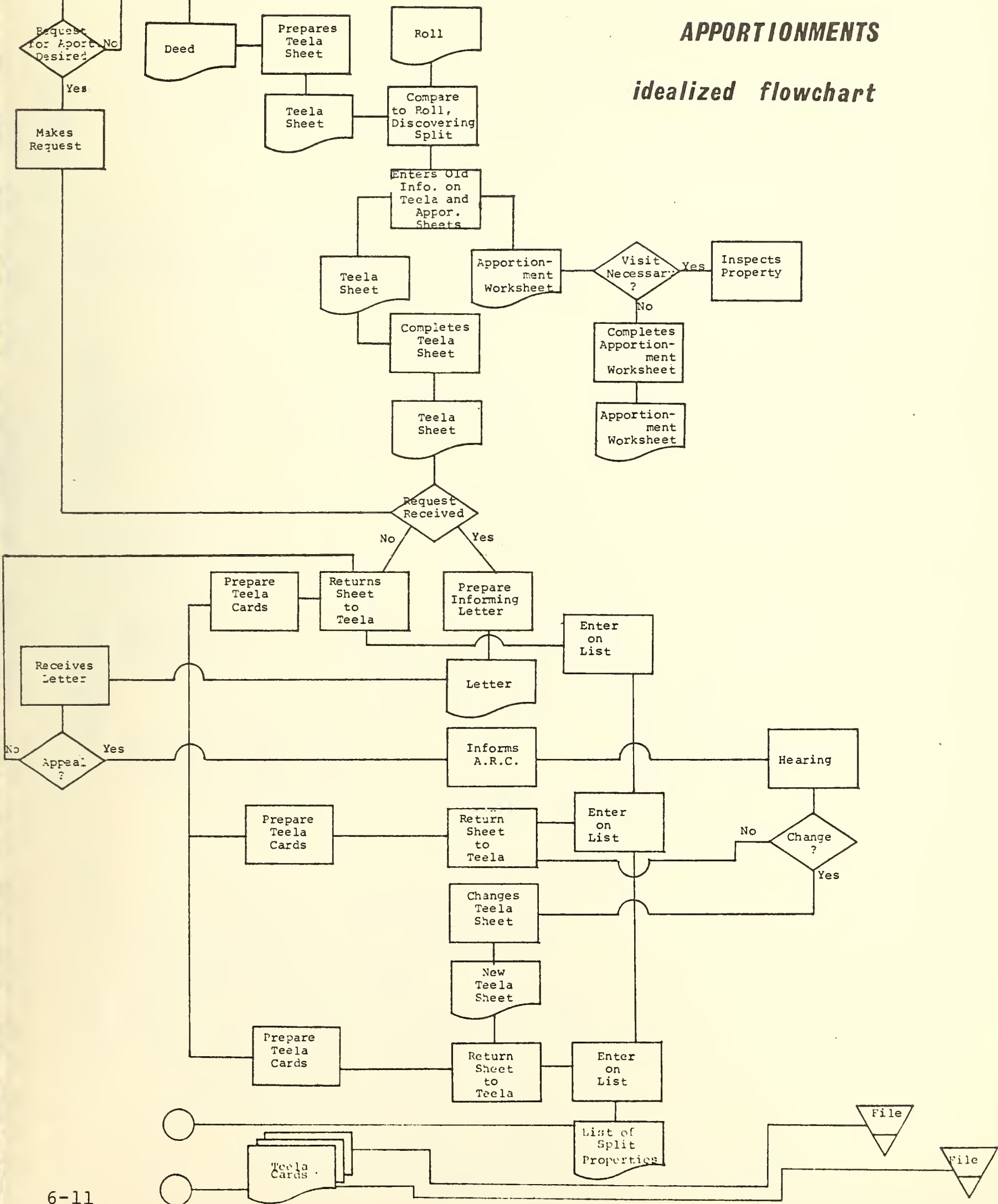
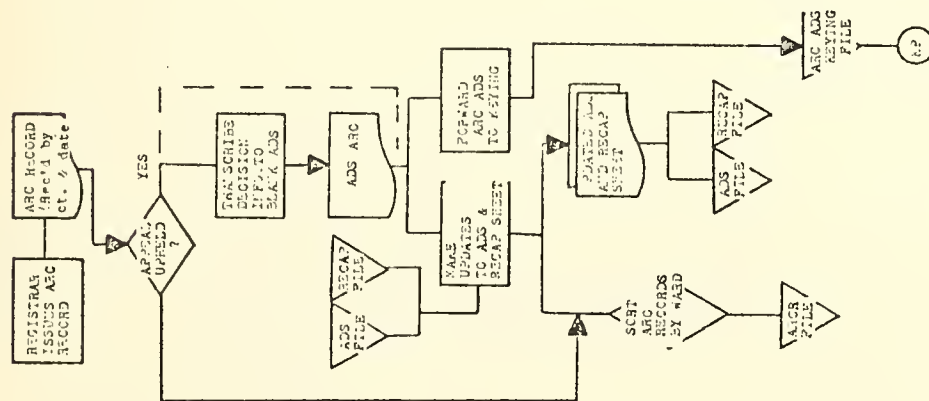
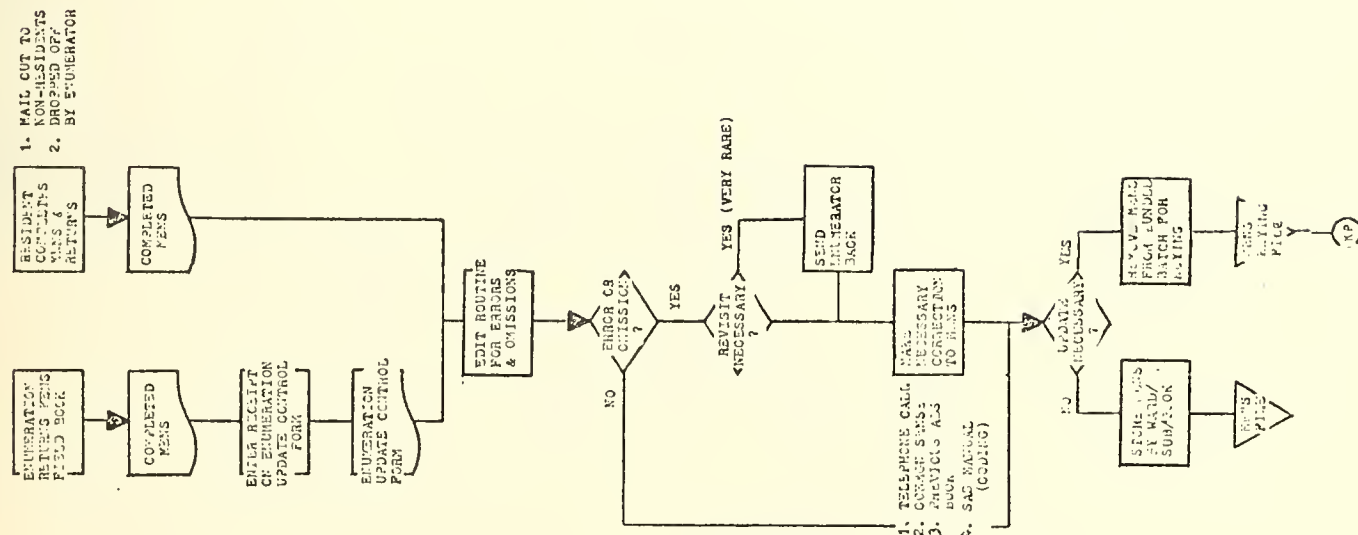


FIGURE 6.8 (a)

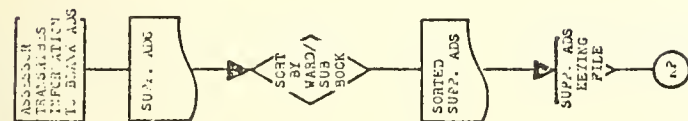
ASSESSMENT REVIEW COURT



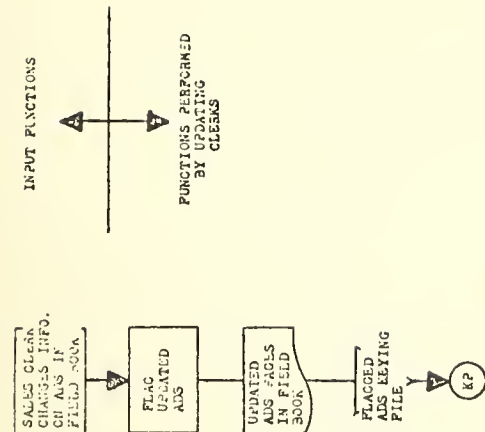
ENUMERATION



SUPPLEMENTALS



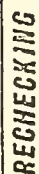
TRANSFERS



INPUT FUNCTIONS

FUNCTIONS PERFORMED BY UPDATING CLEANS

KEY - H G



ERROR CORRECTIONS

TOTALS BALANCING

**SUPPLEMENTAL ROLL
CHANGES TO RECAP SHEETS**



(6) Appeals

Figure 6.6 illustrates in the Appeals procedure the numerous forms that are handled from one operation to another.

(7) Apportionments

This flowchart shows the interrelatedness of the two varieties of apportionments which the Assessment Office carries out: apportionment of assessment for property splits which are discovered through the Sales process, and apportionment for the purpose of the current year's taxation, based on a request received through the municipal tax office. The chart illustrates the advantages in terms of conserved time and effort of retaining all apportionment worksheets produced by both processes, and of checking this file immediately upon receipt of documents relating to a split property, to see if an apportionment of assessment has already been made.

(8) Data Entry and Report Generation

For each function mentioned above, there is an updating phase in which the current assessment master is updated. Figure 6.8(a) shows four of these updating procedures while 6.8(b) illustrates the keying operations as well the method to balance assessment totals and check from error lists.

(C) Annual Assessment Workload

Before the recent passage of the Assessment Amendment Act, 1971, and other subsequent legislation, the annual assessment workload could be summarized in a flow chart form as in Figure 6.9 with the new amendments in force, the normal annual processing schedule has been altered significantly for many assessment functions within the regional office. These changes have largely affected the overall workload of the Assessment Services Section in each office where the majority of activity now occurs within the last six months of the calendar year. Also, within this period, many of the activities must be started and finished within strict deadlines (Both legislative and data processing) such that there is minimum opportunity to balance or smooth out fluctuating workloads.

The chart shown in Figure 6.10 is a simple method to show how assessment functions and deadlines can be represented as a series of events occurring throughout one year. Such a chart enables managers to foresee their expected workload at one glance and enables them to predict peakloads or bottlenecks that may occur due to a resulting backlog or unexpected interruption in the overall workflow. The major functions described above have been further broken down into individual activities and drawn in the form of a network which is composed of both, activities and events, and arranged in chronological sequence such that no succeeding event can be considered completed until all of its predecessor events can be completed.

The actual network is begun by identifying specific deadlines such as the 1st Update of the Assessment Master or Printing of the Rolls, and then working back from these times and determining the time at which earlier activities or projects should be started and finished. In this manner, the manager or supervisor can readily assign his staff certain responsibilities and the time allowed to complete the work involved. During the completion of

successive parts of the schedule, the manager can monitor the progress of its parts and attempt to accelerate any steps which may cause delays in the planned schedule.

(D) Possible Report Extraction From Assessment Files

The Systems Development Branch of the Assessment Division has prepared a report on possible report extraction from assessment files (see Figure 6.10). This was further expanded upon in a publication produced by the Community Planning Branch Ontario Planning Seminar, 1970 where the Assessment Division's information system was considered as the basis of planning for virtually all levels of government in Ontario. As mentioned previously this may result in the assessment data system becoming the focal point of information for governmental purposes. This would impose new data collection requirements on the Division and would necessitate adoption of new methods of inducing similar to the geocoding index mentioned under Data Coding. Therefore one can look to an even more complex assessment data system in the future.

Figure 6.9

ANNUAL ASSESSMENT WORKLOAD

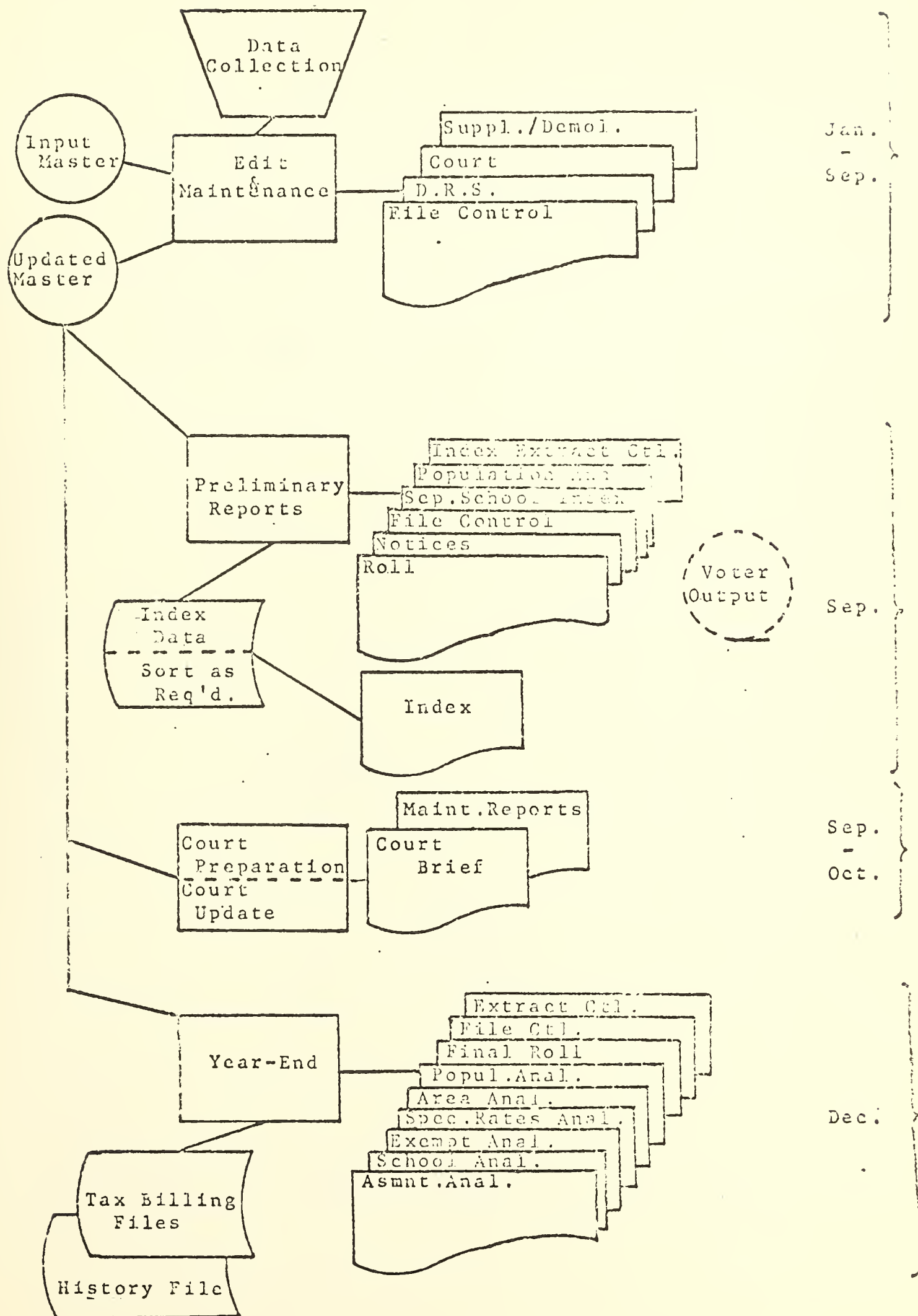
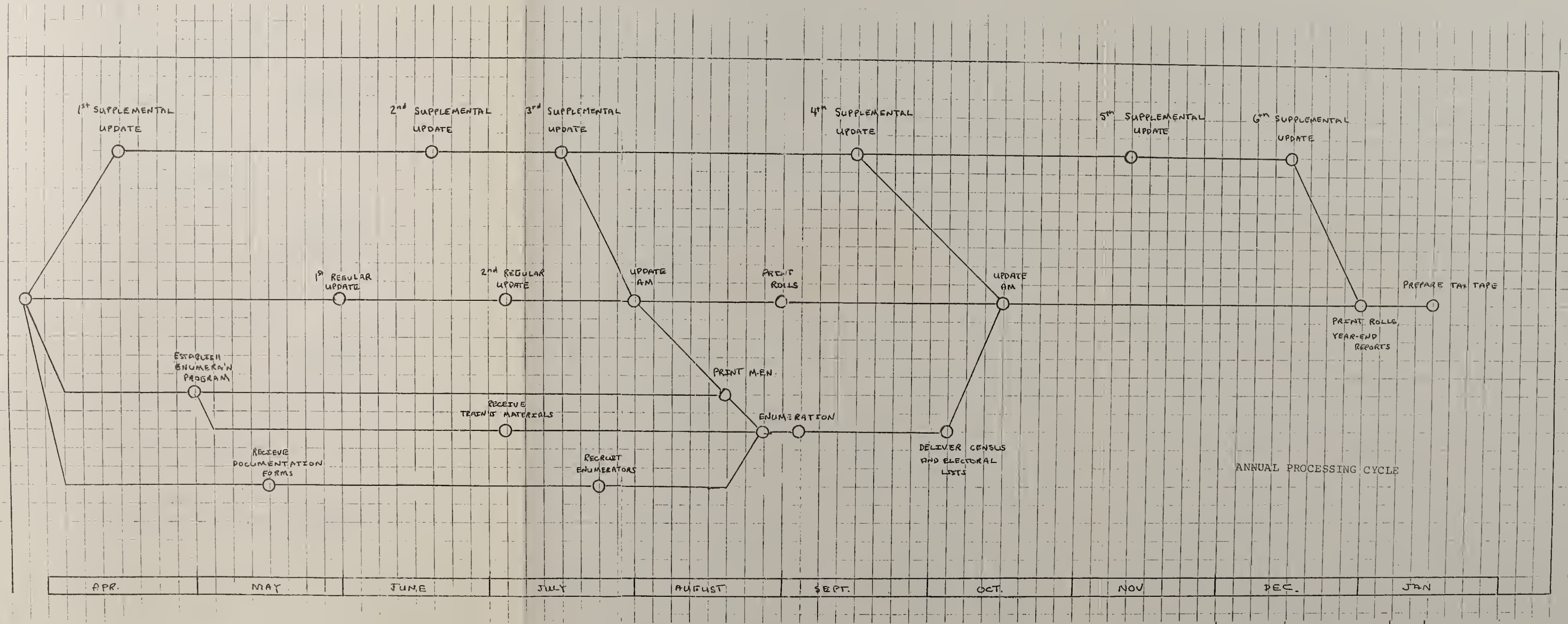


Figure 6.10



SUPPLEMENTAL
UPDATE

4th SUPPLEMENTAL
UPDATE

UPDATE
AM

PRINT
ROLLS

UPDATE
AM

PRINT M.E.N.

ENUMERATION

RECRUIT
ENUMERATORS

DELIVER CENSUS
AND ELECTORAL
LISTS

JULY

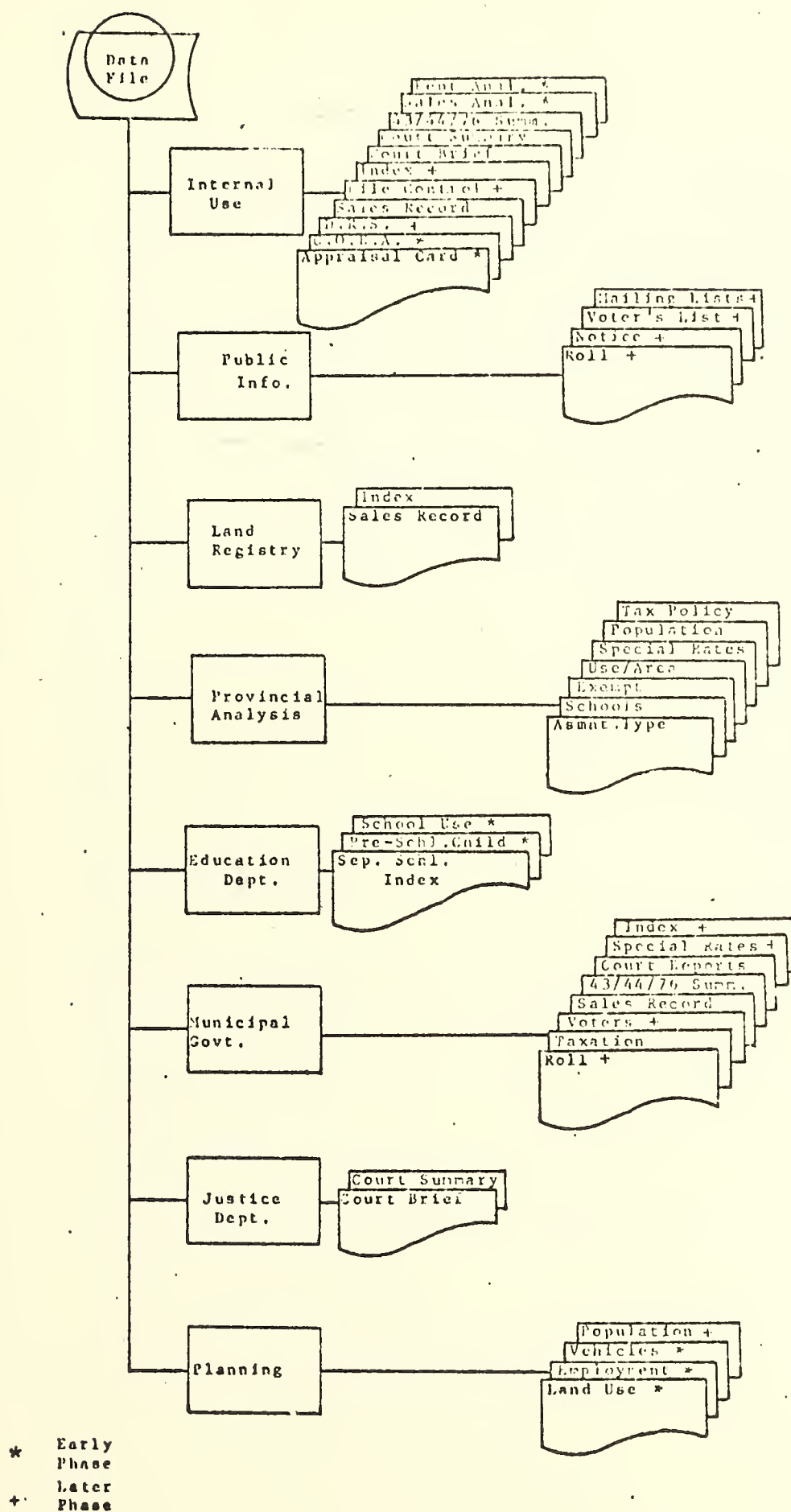
AUGUST

SEPT.

OCT.

Figure 6.11

POSSIBLE REPORT EXTRACTION
FROM ASSESSMENT FILES



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